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CALIFORNIA

Prepared by the - United States Department of the Interior - Stewart L. Udall, Secretary

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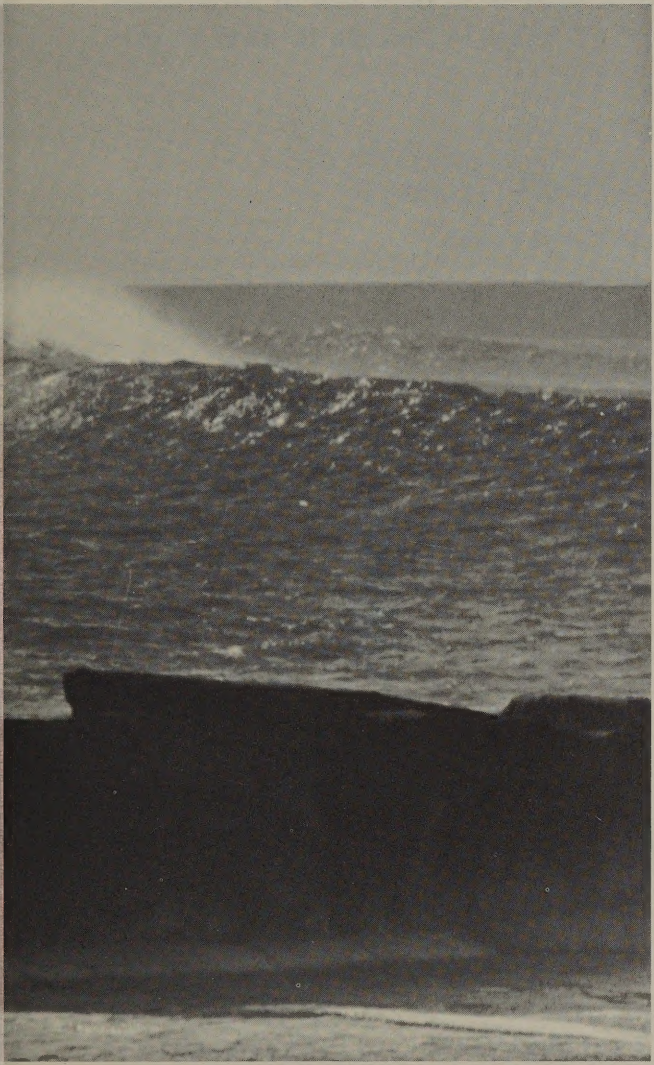

Natural Resources of California

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The purpose of this booklet is to bring a new awareness on the part of the American people of our rich natural resource heritage, its history, its present, and its future. To know our land is to love it and cherish it and protect it from the ravages both of nature and man.

Stewart L Udall

Secretary of the Interior.

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"Eureka, I have found it!"

Missions, such as Carmel at left, compliment the almost spiritual quality of much of California's landscape.

A Golden Promise

The promise of California, the Golden State, was a dream shared by the restless explorers of the 16th century for many decades before the first Spanish galleon rode at anchor in San Diego Bay. In 1510, a book published in Spain flatly announced that ". . . on the right hand of the Indies, there is an island called California, very near the Terrestrial Paradise."

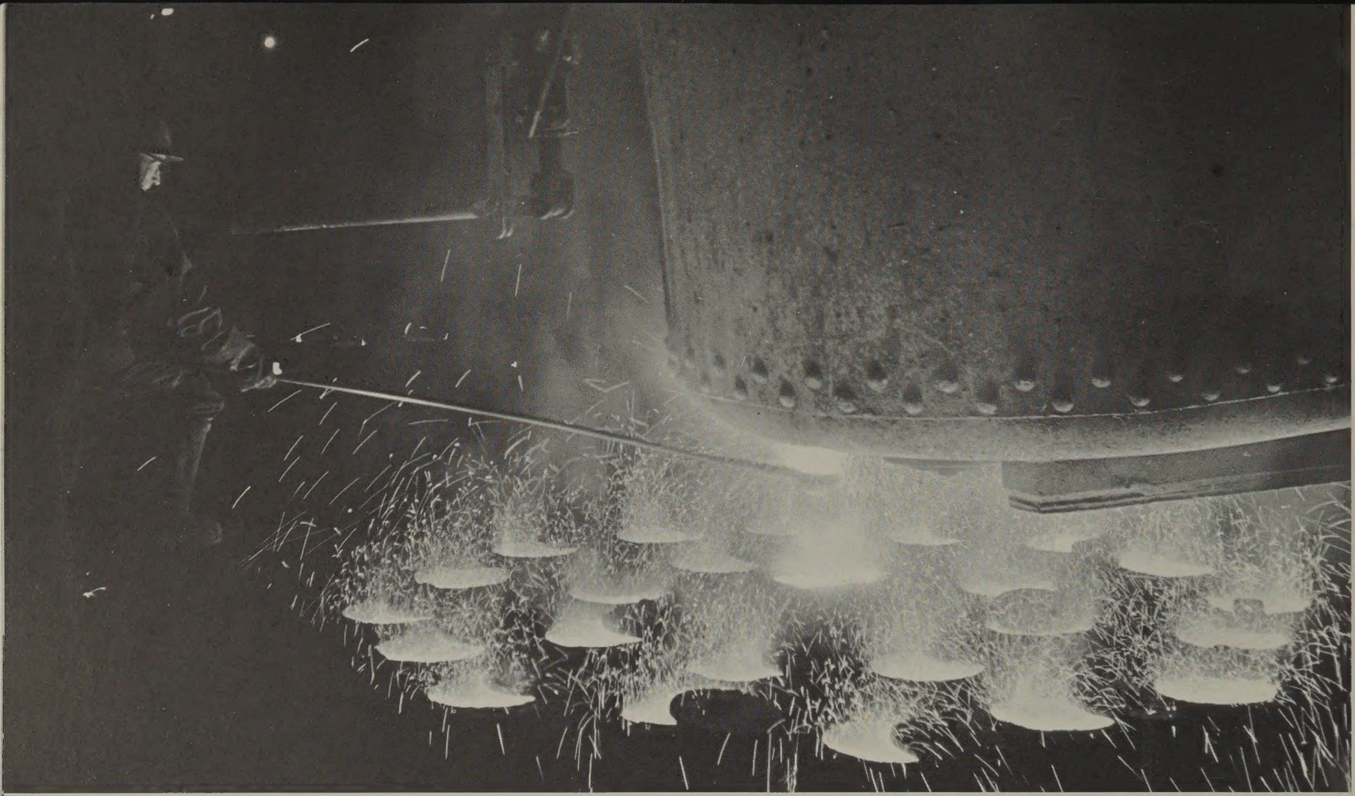
These words and the legend of El Dorado, the gilded city of spices and treasure, beckoningly drew the interest of the Conquistadores. And in 1535, Cortez, the conquerer of Aztec Mexico, landed in what is now the Mexican State of Baja California. Confident that he had found the fabled island, he called this land California.

However, it was not until 1542 that Juan Rodriquez Cabrillo, in quest of "rich countries and navigable passages leading toward the Atlantic," sailed into San Diego Harbor. Later he traveled as far north as Point Reyes, passing the Golden Gate without seeing it.

The failure of Cabrillo and others to return to Spain laden with riches convinced the Spanish Throne that there were neither golden cities nor a navigable passage to the Atlantic, and Spanish interest declined.

In 1559, Sir Francis Drake, later the scourge of the Spanish Armada, sailed the *Golden Hind* into an area north of the Golden Gate—now called Drake's Bay—and named it New Albion. Local Indians greeted him as a god and asked him to become their ruler. Instead, he journeyed inland, claiming the land for Queen Elizabeth I.

Brooking no competition from the English, Drake's visit aroused dormant Spanish interest



in California, and the Conquistadores made a thorough examination of California's coast, initiating early efforts at colonization. By the mid-1700's, Russian interest—as well as loss of French influence in North America—led to a vigorous Spanish effort to settle California.

Expeditions of soldiers and priests began the establishment of the famed mission system—a chain of military posts and missions each spaced a day's journey apart. The first was San Diego de Alcala, dedicated in 1769. Another 20 were constructed over the next 54 years with the completion of San Francisco Solano, north of San Francisco Bay, in 1823.

Each mission had its herd of cattle, its fields and vegetable gardens, tended by Indians—who were taught to build irrigation systems and to become weavers, masons, carpenters, and blacksmiths.

Military posts protected the missions; however, the soldiers had little to do other than continue exploration efforts and capture runaway Indians. Communications with Spain were poor and resupply operations inadequate. Thus, the early settlers gradually lost their ties to their motherland.

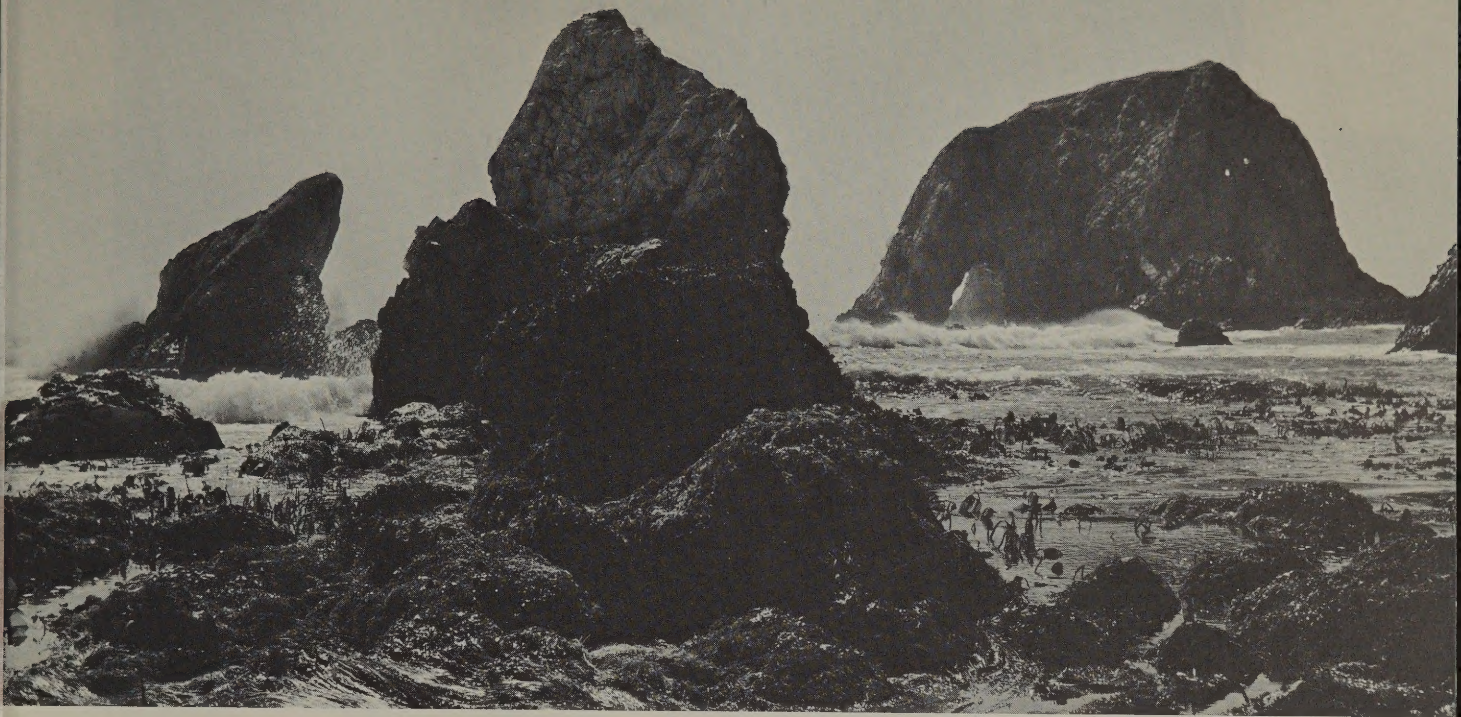
Small towns began to grow. San Francisco, San Diego, Santa Barbara, and Monterey spread out from the edges of military posts. San Juan Capistrano and San Luis Obispo sprang up around the missions, while Los Angeles and San Jose began as independent towns. Ranchers from Mexico, encouraged by generous land and cattle grants, came to California.

British, French, and American ships—though technically barred from the territory—made frequent stops and carried home eloquent reports of California.

News of California spread. Captains of Yankee clippers and fur trappers brought tales of lush valleys and balmy skies, and the Americans came—first, across the Rocky Mountains; then by sea, around Cape Horn.

This steady stream of immigration took place against a backdrop of political instability and change. In 1825, Mexico declared its independence from Spain, and California became a Mexican territory. During the 1830's and early 1840's, there were frequent quarrels between the Californios—a named adopted by early settlers—and the Mexican Government. In June 1846, California declared itself a republic—taking advantage of the confusion which resulted from the United States-Mexican War.

Hardly a month later, Commodore John D. Sloat sailed calmly into Monterey Bay and raised the American flag. After a token battle, the Californios surrendered—and the capitulation terms merely required the residents to give up their artillery and obey the laws of the United States.



California, as advanced as it is technologically, is also concerned with preserving its wilderness areas.

The year 1848 was one of political, social, and economic transformation for California.

The State was formally ceded to the United States by Mexico.

In that year also, the search for the fabulous El Dorado which brought the Spanish to California's shores, ended when John W. Marshall—a wagonbuilder from New Jersey—noticed a small glittering pebble of gold in the tail race of Sutter's Mill. California had, in fact, become the Golden State.

A mass migration followed—the largest since the medieval crusades. In a single year 17,000 travelers came to California by ship, and thousands more took the overland route. For 2 solid months, an unbroken line of wagons bound for "Californ-i-ae" passed from Missouri to Fort Laramie, Wyoming. The population explosion had begun.

This influx of American settlers made some form of permanent, orderly government mandatory. For a while the slavery issue prevented a satisfactory compromise for statehood, and Brigadier General Bennet Riley was appointed military governor in 1849. Shortly thereafter, a State convention drew up a constitution, elected a legislature, and General Riley issued a "remarkable proclamation" abdicating his military governorship. California declared itself the 31st State, and in 1850 Congress formally admitted California to the Union.

California and its Resources

The driving enthusiasm which brought the Spanish conquistadores to the "island of California" has continued, and the legend of El Dorado has been fulfilled—and in ways in which Cortez could hardly dream.

The aggressive drive which characterized California's formation as a State still moves among its citizens today. As in the beginning, people with roots from nearly every nation on earth live and work together energetically to build a bigger and better California—a State which has now become the largest in population in the Nation.

Gold was California's first "natural resource," and its discovery spelled an end to the simple and calm economy of the pregold rush era. The natural resources of California—its minerals, forests, soils, hydroelectric power, scenic and recreational resources, and climate—make it one of the most richly endowed areas in the United States, if not the world.

As in the case of our early national history, these resources seemed so inexhaustible that they were thrown open to ruthless exploitation without regard for the future. Forests were de-

spoiled, surface land denuded of its top soil, its water wasted, and its mineral resources inefficiently produced.

Fortunately, the days of California's wanton exploitation have disappeared into history. Her deserts are being reclaimed; her forests protected. Great dams and water transportation systems are in continuing development. Underneath the land, networks of oil and gas pipelines extend, and above the ground, electric transmission lines carry power for a thriving industrial and agricultural economy. Important scenic and recreational park and forest areas are preserved for use by her burgeoning population.

California Today

The Golden State boasts more than 100 colleges and universities. Among these are the seven campuses of the University of California. Stanford, the University of Southern California, and California Institute of Technology are among the other widely known centers of higher learning—celebrated for their academic excellence and extensive scientific contributions. The State operates an impressive junior college system, and many other fine private colleges contribute to California's great demand for talented and well-trained young men and women.

If you were asked to characterize the cities of the Golden State in one word—that word would have to be "diversity." The great centers of population are as varied as California's magnificent scenery and climate. Sacramento is the State Capital. San Francisco has often been called the most continental city in the United States, as well as the gateway to the Orient and the financial capital of the West. Los Angeles sprawls over the largest land area of any city in the world, blending remnants of the older Spanish culture with the kleiglights of Hollywood. Long Beach is several towns in one—a seaside resort, and industrial center, and oil production and refining area, and with a correspondingly diverse population. And, each of the sister cities surrounding these areas have their own particular distinction.

"Eureka, I have found it!"—California's motto—brings the historic wheel in full circle, and to many modern Californians their State is the "Terrestrial Paradise," not merely near it. The beauty of the Golden State and its variety of natural resources, coupled with a sense of the soundness of conservation imbued in her citizens, assures a continuing contribution to America's future.

Less than an hour's drive from downtown Los Angeles will take you from one of the busiest urban complexes in the Nation to regions of pastoral quiet and beauty.

TAIX

Physical Characteristics

California landscape is as varied as it is magnificent with vistas ranging from jagged mountains and plunging waterfalls to almost every kind of terrain imaginable.

Within the boundaries of the Nation's third largest State, there are facsimiles of almost all the world's terrains and climates. California's variety of vegetation and land forms includes nearly every kind considered typically American as well as many others characteristic of romantic, exotic, or foreign landscapes. Many of these settings are so near Hollywood that motion-picture producers have not far to travel to film Sahara Desert scenes, sequences against a Midwestern plains background, or Dakota "Badlands" locales. The island of Santa Cruz resembles far away Tahiti while California's Truckee region in winter suggests Siberia's frozen desert. From warm valleys where lush oranges ripen in citrus groves, you can see snow-topped alpine peaks crowning the horizon.

Out of all this variety much is typically California. California has the highest mountains in the Nation. It has glassy lakes, cascading torrents of water in mountain streams, broad and placid rivers, vast redwood forests, smaller groves of immense sequoia, and dark, lonely canyons. California's bay harbors—San Francisco, San Pedro, Humboldt, San Diego—are among the most favorable in the world. Alpine glaciers, the Iceberg Lake, jagged peaks, steaming, bubbling sulfur pools, and lava cakes testify to the immense geologic process which sculpted California's contours, and which still carries on its slow and diligent work.

California's Climate

California's climate ranges from subtropical to Arctic; its terrain from arid, lower-than-sea-level deserts to moist mountain forests; and from icy Sierra ridges to foggy coastal slopes. The State embraces a wide variety of flora and fauna. All life zones of North America except the tropical are represented, their distribution depending

A new National Seashore, Point Reyes peninsula is a good example of the rugged California coast line.

not so much on latitude, as in most regions, as on altitude.

There are two seasons in California—wet and dry. Precipitation falls mainly from November to March, influenced by mountain ranges and their barrier effect on the winds that carry moisture from the Pacific. Rainfall is heaviest in the northern Coast Ranges and the Sierra Nevada, ranging as high as 150 inches. In the southern dry regions rainfall may be as little as 2 inches annually.

Although varying in different parts of the State, the annual extremes of temperature are about 120° to −20°. The highest recorded temperature is 134° in Death Valley. The lowest recorded temperature is −45° in Boca, Nevada County. West of the Cascade-Sierra Nevada and the Coastal Range in southern California the temperature extremes and variations are greatly reduced. Coastal temperatures are fairly constant under the influence of air currents from the Pacific. In San Francisco the temperature varies between 51° and 59° throughout the year.

In the Pacific coastal agricultural regions the freeze-free season ranges from 365 days a year on the extreme south coast to 260 days on the north coast. In the high Sierra there are sometimes fewer than 100 days a year without a freeze.

Some of the most striking climatic transition zones are located on the coastal plains and intermontane areas. The California population centers of the Los Angeles Basin and San Francisco Bay areas are in this region. Residents here have a selection of a number of climates within a few miles.

Land Area

California covers nearly 160,000 square miles. Its 1,200 miles of Pacific coastline account for more than half the distance between Mexico and Canada. California is bounded by Oregon on the north, Mexico on the south, and Nevada and Arizona on the east. The highest and lowest points in the contiguous United States occur only 90 miles apart, both in California: 14,495-foot Mount Whitney, and Death Valley, 282 feet below sea level.

California's topography is characterized by two extensive mountain ranges and a great, broad, low-lying valley between them. These ranges converge both in the north and in the south. The Coast Ranges parallel the Pacific coast, rising to elevations of several thousand

Death Valley, so named by survivors of a party of forty-niners, is one of the lowest areas in the world.

feet a short distance inland. Except for a tidewater break in the San Francisco Bay area, these ranges separate the generally narrow coastal plain from the Central Valley of the Sacramento-San Joaquin River systems and from a portion of the Great Basin in the southeastern interior of California. The Cascade-Sierra Nevada Ranges also generally parallel the coast but at distances of from 100 to 150 miles inland. They rise to elevations of 5,000 to 10,000 feet or more.

The land east of the Cascade-Sierra Nevada and east of the coastal chain in southern California forms part of the Great Basin—a broad, upland basin extending eastward to the Rocky Mountains with no surface drainage to the ocean. A large portion of this area in San Bernadino, Kern, and Los Angeles Counties is known as the Mohave Desert. In the extreme southern portion of the Great Basin, separated from the Mohave Desert by a mountain range 4,000 to 5,000 feet in elevation, is a desert region known as the Imperial Valley, embracing the Salton Sea. Because mountains cut it off from moist, mild sea air, the Great Basin contains the driest, hottest, and coldest areas of California.

The Tule Lake area in extreme northern California is separated from the Great Basin by the Warner Mountains. The Tule Lake area is a high, upland, volcanic plateau 4,000 to 5,000 feet in elevation. Under normal conditions it has no outlet to the ocean, but it could overflow into the Klamath drainage in time of flood.

A complex mountain system extends from this high volcanic plateau to the ocean. The Klamath River winds through these mountain regions in northern California and on through the Coast range to the Pacific. Further south the Trinity Mountains and the Salmon-Trinity Alps, embracing the Trinity River, connect the Coast Range with the southernmost portion of the Cascades. The Trinity Mountains form the northwest boundary of the Sacramento Valley.

The Pit River Basin in northeastern California lies between the Great Basin on the east and south and the intermediate lava bed drainage embracing Tule Lake to the north. The upper portion of the Pit Basin has a general elevation of 4,000 to 6,000 feet above the adjacent plateau. The Pit River flows through the southernmost Cascades into the upper Sacramento Valley. It is one of the two California rivers which rise in the great interior platform and wind to the ocean. The other is the Klamath River which cuts across the entire mountain system to the Pacific.

Streams on the western slope of the Sierra

These lava beds, containing underground caves and black cinder cones, once served as the stronghold of the Modocs.

Nevada flow into the Sacramento and San Joaquin Rivers, which irrigate the Central Valley, and flow finally into the Pacific Ocean through San Francisco Bay, the only gap in the Coast Range. In the southeastern deserts of California, many streams are intermittent and flow only in certain seasons. They flow into interior basins, never reaching the sea. The Colorado River forms the southeast border of the State and provides water for irrigation of the Imperial Valley and other dry areas.

The Central Valley lies between the two approximately parallel ranges of mountains, the Coast Ranges on the west and the Cascade-Sierra Nevada on the east. Except for a narrow gap in the vicinity of Sacramento-San Pablo Bays, through which the Sacramento-San Joaquin Rivers flow into the Pacific Ocean, the Central Valley is completely enclosed by mountains. The valley is nearly 500 miles long, averages about 120 miles in width, and includes more than one-third of the basin.

Geology

California's contemporary landscape, with its rugged mountains, picturesque deserts, vast lava plateaus, and broad valleys, is merely the latest chapter in a long and complex geologic story. All the major periods of geologic time have left their mark on California, and more than a billion years of earth history are recorded in her rocks.

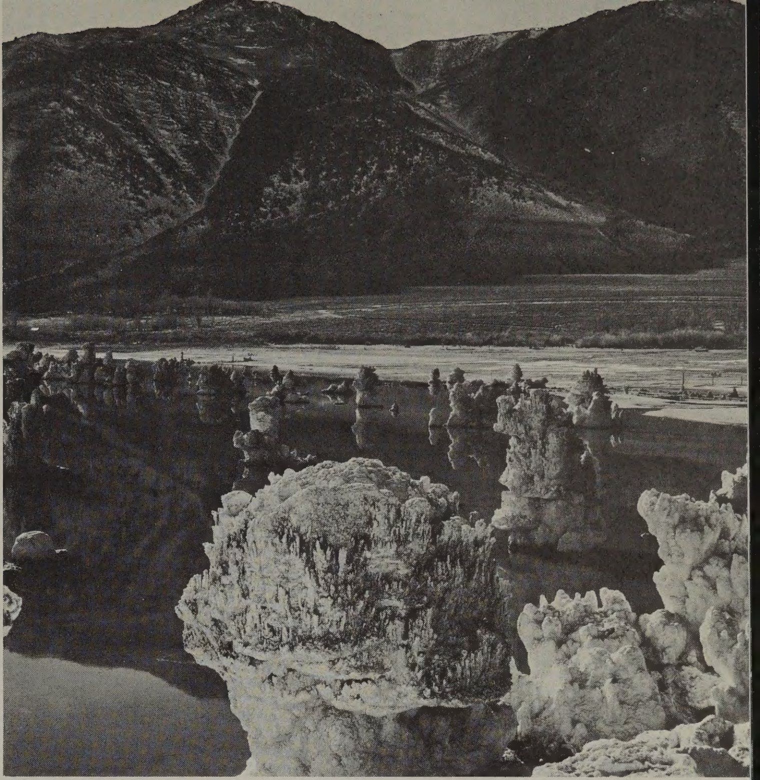
In the distant past, much of what is now California lay beneath a shallow sea. Layer upon layer of mud, sand, and gravel was washed down from ancient mountain ranges and deposited in the sea.

Layers of sediment piled deep in these ocean basins were contorted and twisted into grotesque folds that are now exposed high in the mountains. Forces within the earth acting over millions of years raised, lowered, folded, and broke the rocks into their present form. Remains of the trilobite, ancient insectlike creatures that burrowed beneath the sea floor half a billion years ago, are preserved in the twisted rocks of the desert miles above sea level, a mute witness to the drama of geologic change.

The Central Valley of California is one of the more recently filled basins which has not yet been subjected to the slow but seemingly inevitable forces that build mountains. The Central Valley lies near the center of the State, a huge trough filled miles deep with sediment. Geologists speculate that someday it too may become the site of a great mountain range, following what seems to be the geologic pattern elsewhere.

In contrast to much of the rest of the United States, California's geological makeup is still turbulent and unsettled. Some geologic violence still causes the form of the land to change abruptly, while elsewhere slower and unnoticed forces of geologic change alter earth and rock.

Palm trees in clear sight of snowy mountain peaks is a combination found only in southern California.



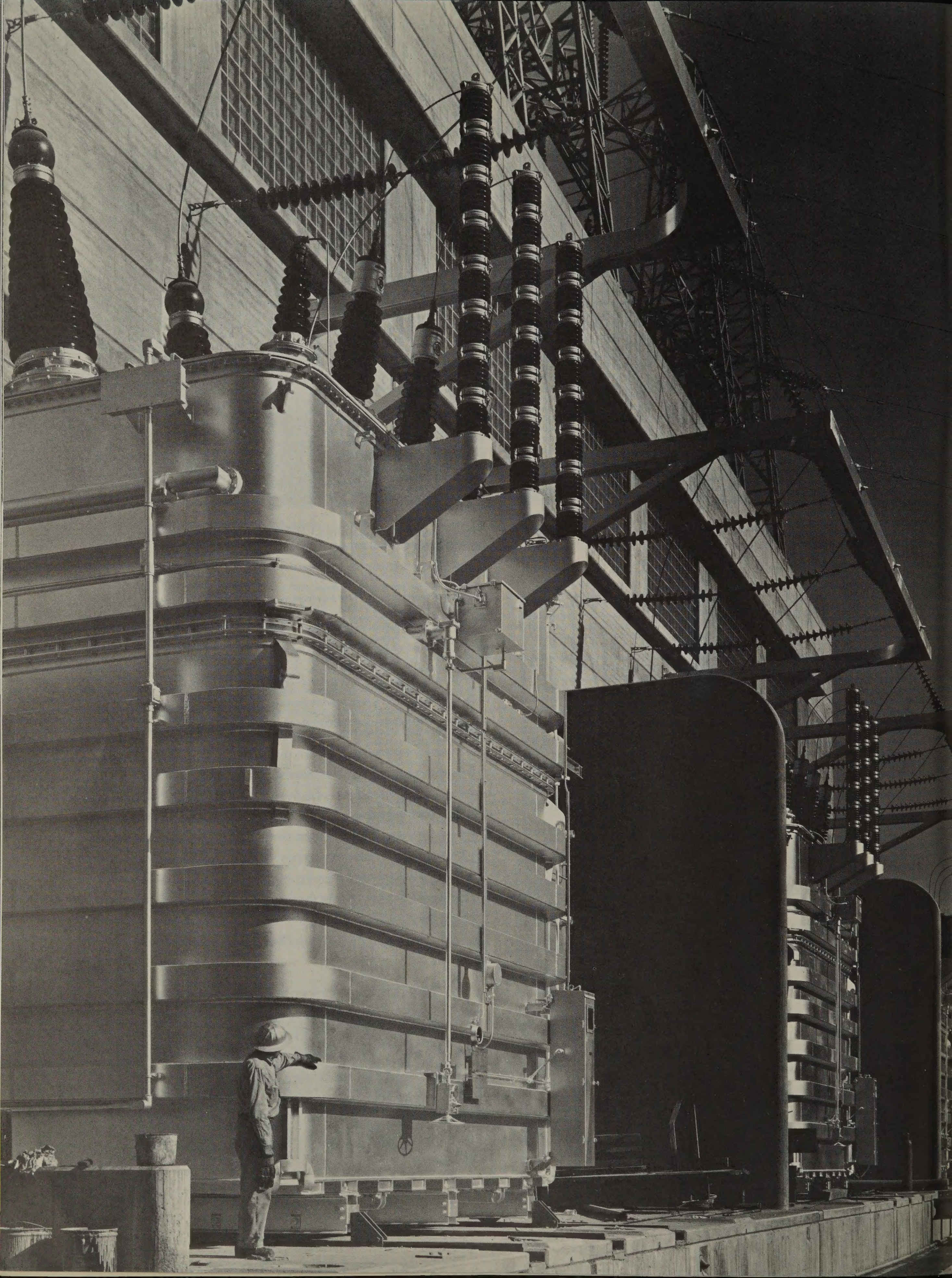
Mono Lake in the Eastern High Sierra is so highly charged with chemicals that they solidify during low water.

Some relatively recently deposited layers of rock have been disturbed in California. At the margin of the continent, rock layers deposited in nearly a horizontal position only tens of thousands of years ago now stand nearly vertical. Instability of the continental margin is felt in earthquakes that spasmodically shake the State. The San Francisco earthquake in 1906—probably the best known earthquake in the United States—was caused by a few feet of movement in the San Andreas fault. This rupture trends northwest-southeast more than 600 miles across the State. Some geologists believe that its horizontal slippage has totaled 350 miles in the last 135 million years, a distance less staggering when considered as the cumulative total of less than one-fifth inch movement per year.

The geologic history of California is further complicated by massive invasions of molten granite rock from deep within the crust of the earth that pushed, contorted, and melted layered rocks. Most of this molten rock cooled and solidified in place many miles beneath the earth's surface. During the hundred million years that followed, this granite was exhumed largely by stream action. Today it is exposed in the peaks of the Sierra Nevada. The streams that stripped away the granite's covering carried their burden of mud, sand, and gravel westward and deposited it in a sea covering the site of the present Coastal Ranges. These old sediments have since been folded, uplifted, and partly exposed. The cyclical wearing away of old mountains to supply sediments that eventually become the rocks of new mountain ranges is a familiar geologic story.

In northeastern California dark-colored lava burst through the surface of the earth to form volcanoes and lava flows that covered hundreds of square miles. Mount Shasta is an extinct volcano. The only active volcano is Lassen Peak. During its latest eruptions in 1914–17 lava poured out, gas was emitted in great blasts that felled trees for miles around, and clouds of steam and ash rose more than 5 miles into the air.

Earthquakes and volcanic eruptions are spectacular and exciting. No less effective, however, are the slow, persistent geologic agents that do their work through billions of years: the small stream wearing down its valley, the wind sweeping grit across hard stone, the relentless forces that cause rocks and soil to creep. All are sculptors of the ever-changing California landscape.



It remains for California to decide how to utilize its available water without destryoing the beauty of its resources, a plight that is becoming critical as the need for water for industry, agriculture, and domestic uses increases.

Water and Power

Water is California's most precious asset, and also her most pressing need. Without an ample supply of this vital resource, her fertile fields would lie fallow, her cities and towns would wither, and her industry and commerce would be stunted. Water has always determined where and how men live; civilizations through the ages have blossomed along river banks and spread afield as men learned to control the waters and divert them to dry land.

The Golden State's chief rivers are the Klamath and its principal tributaries—the Shasta, Trinity, and Salmon—which flow northwest; the Sacramento and San Joaquin, with their many tributaries, which drain the Central Valley and discharge into San Francisco Bay; and the Colorado, which forms the California-Arizona boundary. Within the State's borders are also a number of smaller streams, including the Smith, Mad, Eel, Russian, Pajaro, Salinas, Santa Maria, Santa Ynez, and Santa Clara. These and many others empty directly into the Pacific Ocean.

Like the State itself, California's water supply is characterized by contrasts. Annual rainfall ranges from more than 110 inches in the Klamath Mountains of the north to 6 inches in the south Central Valley and to 2 inches in the extreme southeastern portion of the State. Annual water runoff from precipitation varies from more than 80 inches in the wettest drainage area to nearly zero in the southeast. While the average runoff, statewide, is about 71 million acre-feet, it has been as high as 135 million acre-feet and as low as 18 million.

Through irrigation projects, such as this one at Selma, farmers are assured of a good harvest each year.

California's leading water problem is not a deficiency of water; rather, it is the availability of the proper amount of water at the time and place it is needed. Most of the State is subject either to flooding or drought, some areas to both.

The problem is three-sided: seasonal, geographical, and ecological. The greatest runoff occurs in the winter and early spring, the lowest during the summer growing season. Also there is wide variation from year to year; one year the State may be drenched; the next, parched. Approximately 72 percent of its water resources are found in the northern third of the State, whereas 75 percent of the demand is in the remaining two-thirds. While the North Coast is the only area having a general surplus of water, the Central Valley, with its skyrocketing population and its expanding agriculture and industry, accounts for more than half the total water use in the State.

Other localities—such as the San Francisco Bay area, Central Coast, South Coast, and the Mojave and Colorado deserts—also have inadequate water supplies to meet their high water requirements. Many of the larger streams in the southern part of the State are dry for months of the year, and this is true of smaller streams in most sections of the State.

The unequal distribution of surface water resources has resulted through the years in a serious overdraft of underground water supplies, as people have been compelled to pump water to meet their needs. A generally good supply of underground water is available in the lightly settled areas, while in the highly developed sections, such as the stretch along the San Joaquin River in the Central Valley, water is being used at a much faster rate than it is being replaced. Pumpage from underground sources in the San Joaquin Valley exceeds pumpage from any other single valley in the Nation. There are also overdrafts in most of the South Coast basins.

This overdraft of California's underground water basins has caused the lowering of water tables, intrusion of sea water into coastal basins, subsidence of ground surfaces, excessive pumping lift and, in consequence, high pumping costs. To reduce such losses, the California State Legislature has enacted laws which partially control water extraction.

Artificial recharge of underground basins is being attempted to relieve the overdraft and to build up a fresh water barrier against salt water encroachment. In the Santa Clara Valley of northern California, cyclic storage has been instituted by putting surplus runoff into underground reservoirs for use during dry years.

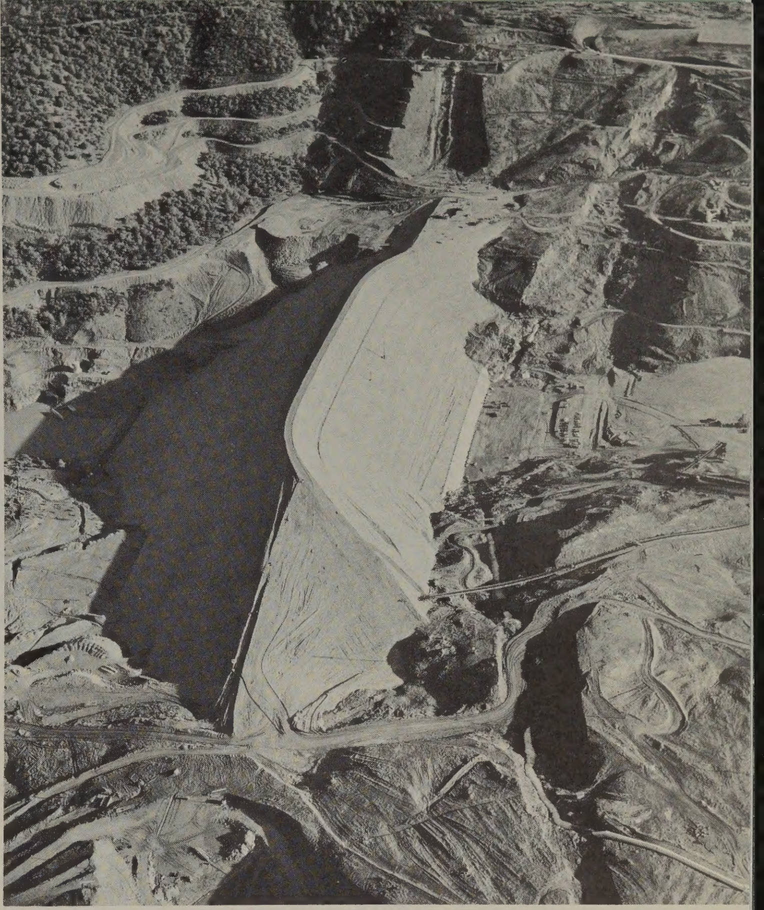
The need for conservation and wise utilization of available water supplies was early recognized by those who settled the Golden State. When the Spanish padres founded the missions along the coast they applied their knowledge of irrigation to diverting river water to their fields and gardens. Remains of their ditches and reservoirs are still reminders of the fruits, vegetables, and grains they and the mission Indians grew in those long-ago communities. The American colonizers who followed later, dry-farmed or irrigated their lands by means of direct diversion without storage. These irrigators were, for the most part, private ranchers, but commercial development was soon initiated and was well underway in the 1870's.

Always progressive in their outlook, Californians were constantly seeking better ways to improve agriculture on their potentially rich acres. In 1873, a board of commissioners prepared a report on irrigation in the San Joaquin, Tulare, and Sacramento Valleys. By the turn of the century, it became evident that water storage was vitally necessary to sustain farming operations, and a number of dams and reservoirs were built in the 1920's. Development of hydroelectric power, concurrent with the storgae of water for irrigation, provided a paying partner for some of those pioneer irrigation enterprises.

Cooperative Water Resource Development

After World War I, the State legislature appropriated money for a series of studies which evolved, during the early thirties, into the well-known State water plan, a comprehensive blueprint for extensive water storage in the north and south valleys and the transfer of surplus waters from the Sacramento Valley to thirsty San Joaquin Valley.

Among the units initially proposed by the plan for construction were Kennett (Shasta) Dam on the Sacramento River a few miles north of Redding, a series of canals to convey the stored water releases from the delta area southward to the San Joaquin Valley, and a power transmission system to carry the hydroelectricity generated by a powerhouse at the dam. When the State found itself unable to finance these multimillion dollar facilities, the Federal Government in 1935, authorized them as the first phase of the Bureau of Reclamation Central Valley project, which has now developed into one of the most extensive artificial water transport systems in the world.

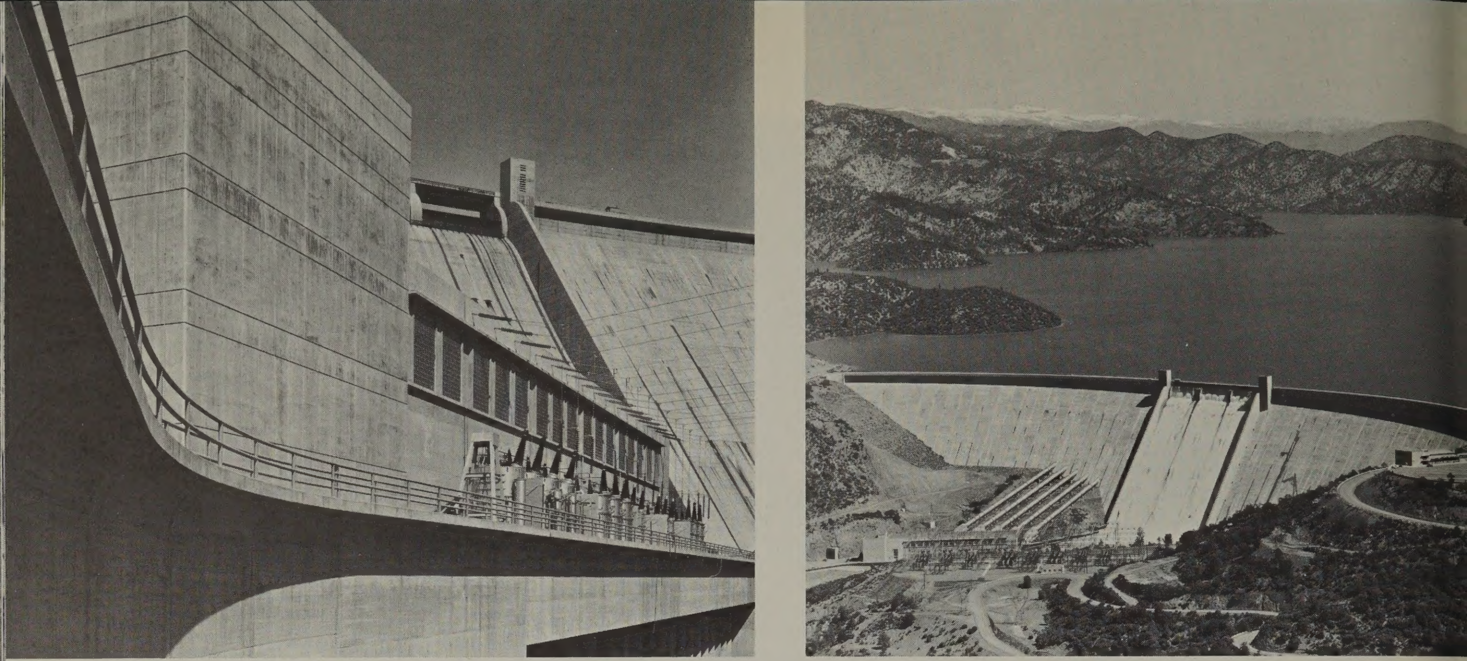


Scheduled for completion in 1968, Oreville Dam will be the largest embankment dam in the world.

Latest feature of the CVP is a unique Federal-State joint-use project, the San Luis unit. This complex of dams, reservoirs, pumping plants, and canals will distribute irrigation water to Reclamation project farms and also will function as a vital link in the 500-mile-long conveyance system to transport State water to extreme southern California.

Meanwhile, the State is building as a feature of its Feather River project what will be the highest dam in the United States, 765-foot Oreville Dam on the Feather River. Aqueducts, including the joint-use San Luis Canal, will carry the water regulated by Oreville from the San Francisco Bay area as far south as Los Angeles and San Diego to help supply municipal and industrial water for those cities.

Other Federal and State projects are operating, and still others are under construction, to solve



Shasta Dam and Powerplant are the key to the Bureau of Reclamation's Central Valley project.

the geographical water distribution problem in the State. The damming of the Colorado River at Boulder Canyon by Hoover Dam made possible water resource projects downstream in southern California that contribute materially to the agricultural and economic development of the area. One of these is the Colorado River Aqueduct which was constructed by the Metropolitan Water District of Southern California, to bring Colorado River water to Los Angeles. The Owens River Aqueduct, a transmountain diversion built by the city of Los Angeles, also helps supply municipal and industrial water to the sprawling, spreading city of the Angels. Development of the Klamath River project, begun by local interest, was completed by the Bureau of Reclamation.

Other problems, besides those of storage and distribution, result from the overall shortage of water and the swelling population of the third largest State in the Union. Among them is the increasing pollution of our water, and today's Federal, State, and local water resources development planning includes pollution control among its objectives.

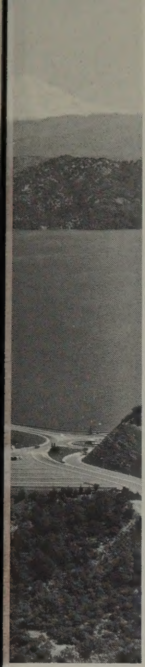
Power Intertie Promises Needed Energy

The burgeoning energy requirements of California and of the Southwest will soon be met with hydroelectric power transmitted from the Northwest by means of the Pacific Northwest-Southwest Intertie, the most important potential achievement in the history of electric development in the United States. Consisting of four major lines from the Columbia River to Southwest terminals, and four shorter interconnections, this system will be built jointly by Federal and non-Federal public power agencies and private utilities. President Johnson described it as "launching a new era of cooperation between private and public power in the United States."

The Intertie will include the Nation's first high voltage direct current lines, and the world's longest DC lines. One 830-mile line will be constructed by two Federal agencies, the Bureau of Reclamation and Bonneville Power Administration; and the other, 827 miles long, will be built by BPA and the city of Los Angeles. The first will transmit power from The Dalles Dam on the Columbia River to Hoover Dam on the Colorado, to be distributed to users throughout the Colorado River Basin; the second will carry energy from The Dalles to Los Angeles for use in that metropolis.

The other two major lines will be 500,000-volt alternating current lines to be built jointly by the Federal Government and private utilities. They will extend from the John Day Dam on the Columbia River to the vicinity of Los Angeles, serving northern and central California points.

When completed, the Intertie will integrate the largest hydroelectric system in America (BPA), the biggest municipal system (Los Angeles), and the largest single privately owned



The Delta Pumping Plant is the starting point for the new 444-mile California Aqueduct.

system in the United States (Pacific Gas & Electric Co.).

Looking to the future, it is easy to see the Pacific Northwest-Southwest Intertie as the first section of a giant electric grid of private and public transmission lines covering the entire country and promoting progress from Canada to Mexico, from the Pacific Ocean to the Atlantic.

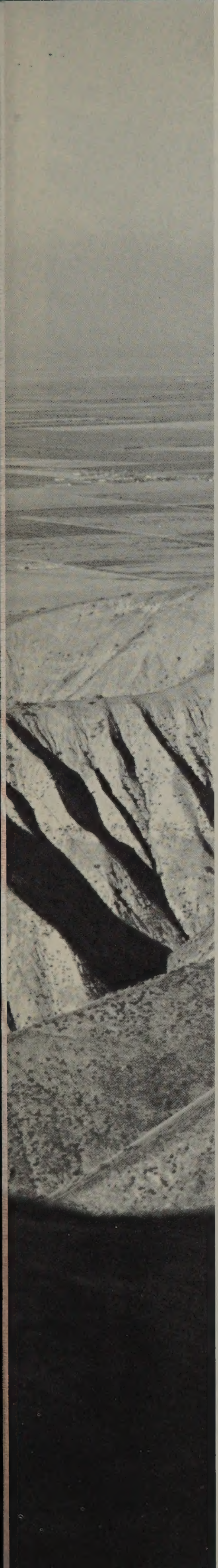
Future Needs Being Mapped

It is predicted that by 1980 California's population will have exceeded 28 million, and that her water needs will have increased by more than 100 percent, to 55 million acre-feet a year. This means that nearly 18 trillion gallons of water will be required to furnish Californians with water to drink, to wash with, to fish in, swim in, and boat on, and also to generate hydroelectricity for lighting their homes, operating dishwashers, air conditioners, washing machines, and other home appliances, as well as turning the wheels of industry.

In addition to her heavy and imaginative concentration on the conservation, protection, and development of conventional water resources, California is cooperating with the Federal Government in a saline water conversion program. The Department of the Interior and the State jointly financed the building of a saline water conversion plant in San Diego on a site donated by the city. Capable of producing 1 million gallons of water a day, it was operated for 2 years before being dismantled in March of 1964 and shipped to Cuba to serve Guantanamo Naval Base there. It is being replaced by a joint effort of the Department and the California Water Resources Board. The State and the Federal Government are also cooperating in the development of a multi-million-gallon saline water conversion plant.

The Federal, State and local governments, as well as private enterprise, are working in harness in California to achieve optimum development of the State's water resources. High on the list is the economic desalting of substantial volumes of sea water. This includes not only water storage for irrigation, municipal, and industrial water supplies, but also hydroelectric power generation, navigation improvement, water-oriented recreation development, vegetation management, evaporation control, seepage reduction, waste-water reclamation, flood control, relief of ground-water overdraft, pollution prevention, salinity control, and fish and wildlife enhancement.

The ingenious, many-pronged attack on the water problems of the Golden State could well serve as a natural laboratory for cooperative solutions of water resource conservation problems throughout the Nation.



An epoch began with the discovery of gold in California, but today the State's principal mineral resource is oil. California has become one of the Nation's leading mineral producers.

Mineral Resources

California's mineral resources have been responsible for much of its historical development. Indians used California flint for arrowheads and spearheads; the Spanish and Mexicans began to exploit mercury deposits more than a century and a half ago. Gold, of course, opened a whole new era in California's history.

Today, California's most valuable mineral products are petroleum, natural gas, boron, iron ore, and several nonmetallic minerals. In addition, millions of dollars worth of mercury and gold are mined in the State each year.

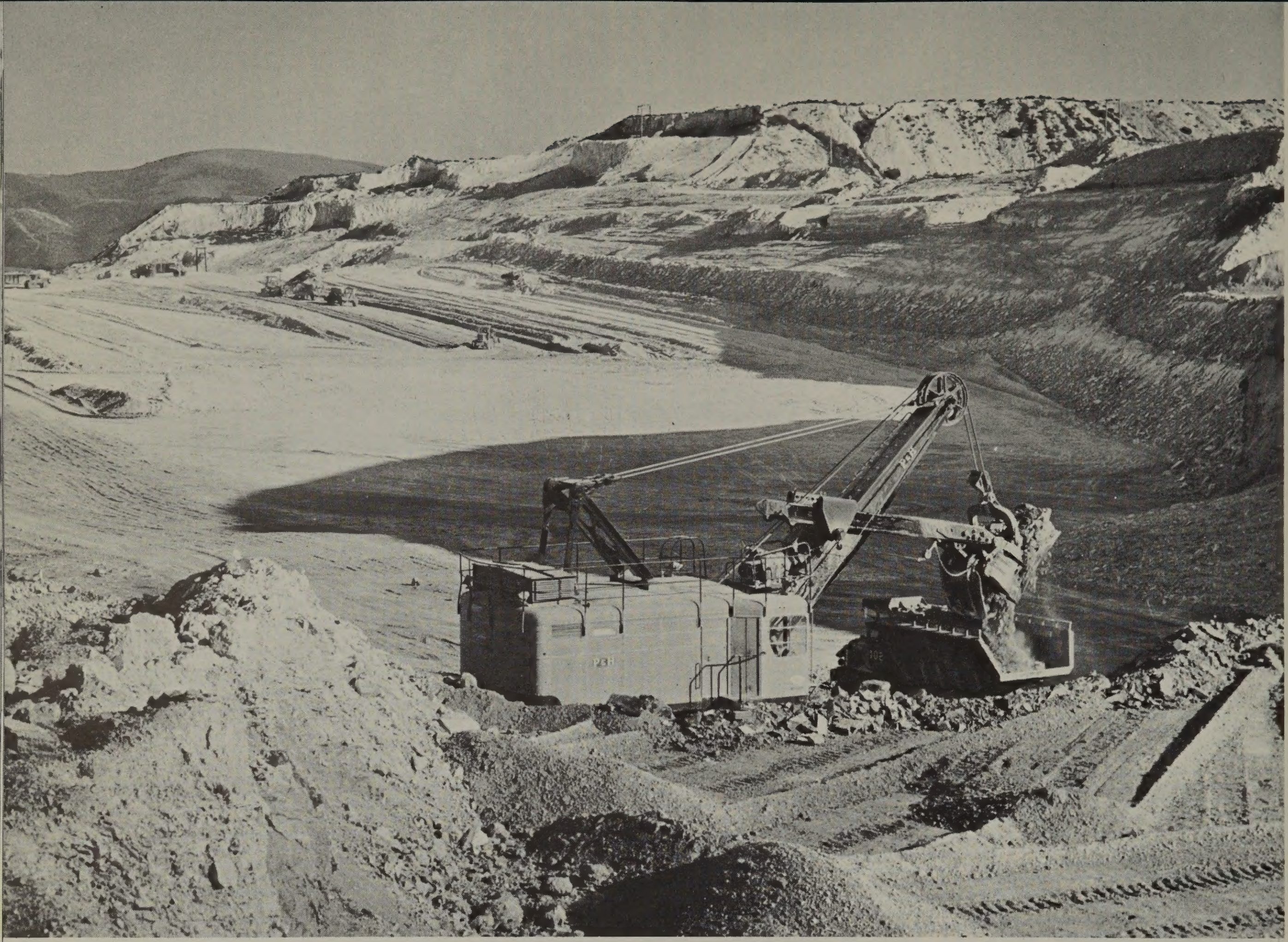
California leads the Nation in the weight and physical volume of its mineral products, the number of mineral commodities it produces—50 or more in a typical year—and in the value and tonnage of mineral raw materials its industries and people consume. In recent years, its annual mineral production has been valued at close to $1½ billion, third highest in the Nation.

Technological changes, new transportation routes, and wider availability of water and power throughout the State have opened possibilities for new industries and extended the horizons for mineral producers in California.

Mineral Economy

California is self-sufficient in 22 mineral commodities, of which it is the largest or the second largest domestic producer. It uses more than its total production of all other minerals, including petroleum.

Most counties produce from half a dozen to a score or more of different minerals. All 58 counties, including urban San Francisco, have resources of stone or sand and gravel. Tiny Alpine County, with fewer than 500 residents, is a supplier of silver, gold, zinc, lead, and copper. Kern County produces a third of a billion dollars worth of minerals a year, an output higher than that of many entire States.



Huge Los Angeles County, most populous in the Nation, has an annual mineral output valued at nearly a quarter of a billion dollars.

Fuel Resources

California's mineral fuel resources are primarily oil and gas. The few bituminous and subbituminous coal seams in the State have not been mined for many years. Output from the one remaining lignite mine near Ione, in Amador County, is now processed not as fuel but for its high content of montan wax, used as an additive in making phonograph records, shoe polish, and rubber products. Peat from four counties is used only for soil conditioning or other agricultural purposes.

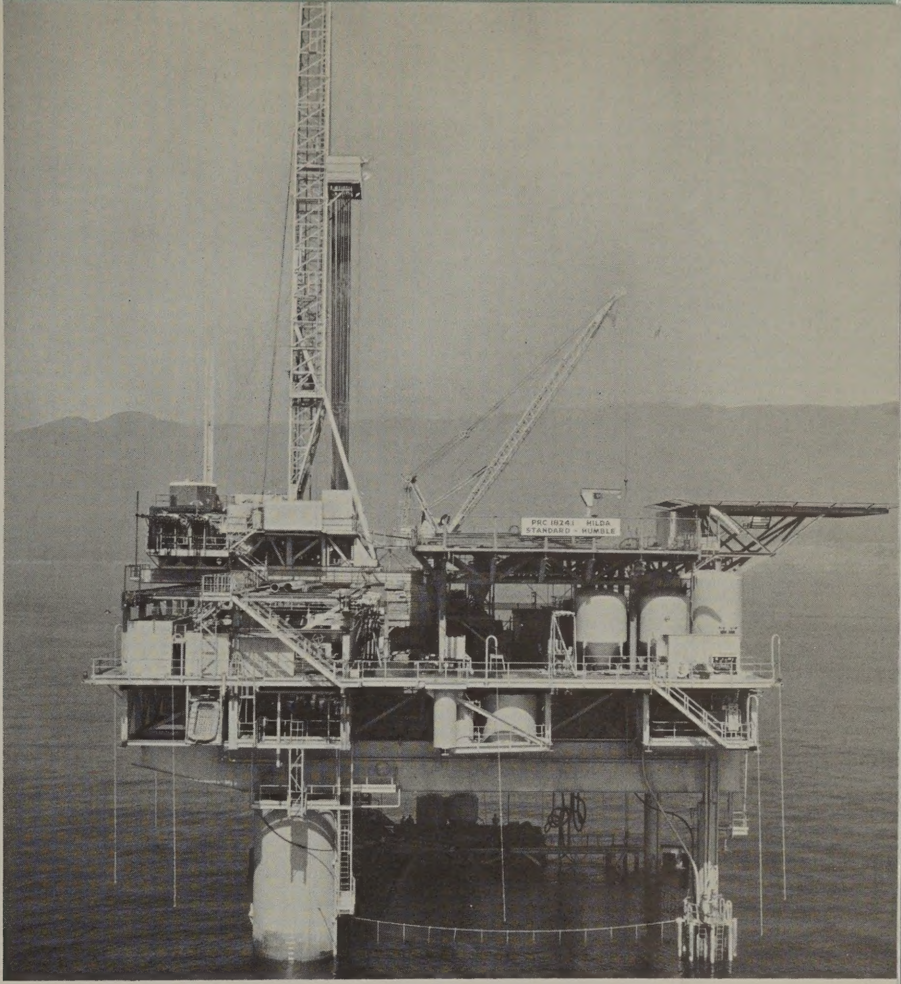
Despite its huge output, California's liquid fuels industry cannot meet the demands of the consumers within the State. Crude petroleum and gasoline and other refinery products, must be imported each year in constantly increasing quantities by ocean tanker and pipeline. Natural gas is imported by pipeline from as far away as Canada. This demand stems from a combination of ever-rising population, lack of solid fuels, and the requirements of more than 10 million motor vehicles registered in the State.

Production of crude petroleum reached its peak in 1953 and began to decline the following year. It has recently averaged about 300 million barrels annually. Increasing emphasis on secondary recovery methods and Federal oil and gas leasing on the ocean-bottom miles seaward from older tidelands drilling are slowing the decline but have not fully compensated for the reduced output from older oilfields. More than a quarter of the crude oil being processed by California's two-score refineries now is obtained outside the State. Most of the in-State production is in the five adjoining counties of Los Angeles, Kern, Ventura, Orange, and Santa Barbara, although Fresno and Monterey counties to the north also report significant quantities.

California has begun exploring its offshore resources of oil and gas hidden in the submerged lands of the Outer Continental Shelf. Oil

(Left) Diatomite mines produce material for toothpaste, filters, and insulation.

(Right) Not all of California's oil comes from the land: pictured is an off shore rig.



and gas reserves beneath the ocean's depths may open a promising source of fuel for California and the Nation. With advanced technology, drilling for possible reserves in depths encountered outside the 3-mile limit off the California coast has become practical.

Natural Gas

California ranks fifth in output of natual gas and sixth in production of natural gas liquids. Discoveries of "dry" gas in the San Francisco Bay area and farther north have more than equaled the drop in "wet" gas from oilfields. As a result, estimates of the total reserves of natural gas in California have risen and are now about 9 quadrillion cubic feet—between 12 and 15 years' production at current rates.

Gas is found in 26 counties, but over half the annual production is from fields in three adjoining southern counties—Kern, Los Angeles, and Ventura. These three also lead in producing liquefied petroleum gas, natural gasoline, and the other natural gas liquids.

Varied Metals

California is the principal domestic producer of tungsten, mercury, and the rare earth metals. Copper, silver, lead, zinc, and the platinum-group metals are mined chiefly as byproducts or co-products with other minerals. Gold lode ores and placer deposits are found in a total of 29 counties. Molybdenum and manganese are mined on a limited scale, and lower grade reserves of these metals, and of chromium have been mined in many counties from time to time to meet defense requirements. Iron ore (magnetite) is mined and concentrated for use in making steel in California and for export to Japan. Magnetite also is used as an ingredient of heavy concrete.

Nonmetallic Minerals

Construction of highways, homes, and factories on an unprecedented scale has made California the largest market in the Nation for construction materials, most of which are produced locally. The State's cement, sand and gravel, and stone production is valued at over $3 billion annually.

California's output of boron and boron compounds, valued at about $50 million a year, supplies all the United States and most of the world market. Housewives have used borax in cleaning for nearly a century, but new uses in ceramics and in the chemical industries now account for most of the demand. Metallurgy and space age technology are also stimulating demand for boron materials found in bedded deposits in Inyo and Kern Counties and in the brines of Searless Lake, San Bernardino County.

California produces annually more than half of the domestic output of diatomite, gypsum, iodine, sodium compounds, and sulfur ore and the second largest quantity of lithium minerals and compounds, rare earth minerals, and wollastonite. Barite, clays, feldspar, gem stones, mica, pumice, salt, talc, soapstone, and pyrophilite deposits are mined at various locations within the State. Asbestos, bromine, calcium chloride, carbon dioxide, fluorspar, magnesite, perlite, and potassium salts are produced in some quantity.

Four plants in California process sea water or salt-works residues to produce annually more than $6 million worth of magnesium oxide and other magnesium compounds.

Processing Industries

Most of the iron and steel foundries and furnaces in California use scrap metal or pig iron from outside the State as their principal raw material. An integrated steel plant at Fontana, however, uses both California and Nevada iron ore in its blast furnaces. This plant is also known for its use and reuse of water, a conservation effort made necessary by the scarcity of water in the area. Industries that fabricate aluminum, copper, and magnesium also are important in California's mineral economy.

Most of the world's boron comes from this mine and refinery in Kern County.

Land and Forests

Fertile soils, an intensive water resource development program, and regions of favorable climate provide the Golden State with rich forest and agricultural land resources. California covers 100,313,600 acres, enough land for urban growth, farming, and good timber and livestock industries.

More different commercial crops are grown in California than in any other State. California produces nearly 9 percent of the national total cash receipts for farming. Cotton is the first-ranking crop in the State. Other important crops are fruits, vegetables, rice, and sugarbeets. California's unique climate allows large-scale production of specialty crops like dates, avocados, lettuce, tomatoes, and nuts. Feed grain production is high, bolstering range forage for livestock.

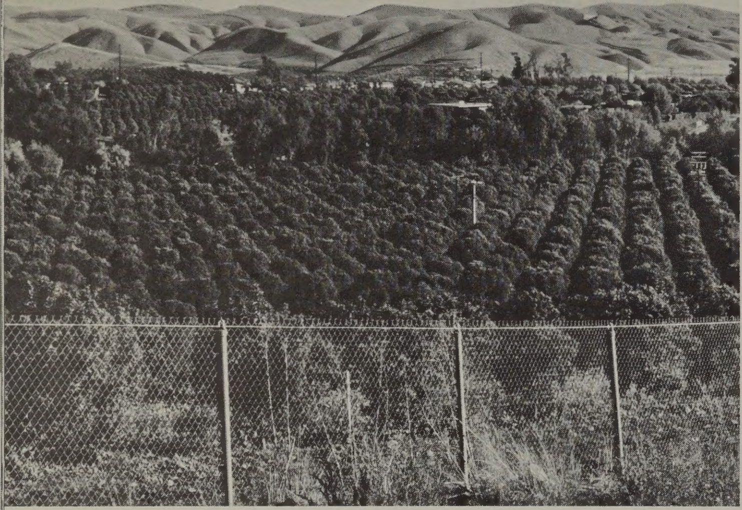
The 99,000 farms in California employ nearly half a million persons during the peak of seasonal activities. Contract laborers and transportation and processing workers, as well as farmers, depend on agriculture. The average farm in California covers 372 acres and is worth more than twice the value of the average farm in the Nation.

Most California harvest come from lands which receive irrigation water to supplement natural moisture and rainfall. Parts of the Central Valley and the Imperial Valley are the most intensively irrigated lands in the State. One of the world's largest water control and distribution systems is still to be completed.

Cattle and Sheep

For nearly two centuries California has had a cattle and sheep industry of considerable size and importance. Livestock raising began with the mission settlements of 1769. Today, the sale of livestock and livestock products accounts

From the groves in northern California, where individual trees grow to a height of more than 300 feet, logs are transported to Eureka and then loaded onto ocean-going freighters.



California farmers produce almost 300 different crops and more than one quarter of the total supply of fruits, nuts, and vegetables. At left is an orange grove and above is a date orchard at harvest time.

for more than 39 percent of the agricultural income of the State.

Certain public lands are used for livestock grazing under controlled conditions. Under the terms of the Taylor Grazing Act, livestock owners may lease or acquire permits and licenses to graze their herds on public domain lands administered by the Bureau of Land Management. In addition, leases and permits are available for grazing on certain National Forest lands. Altogether, more than 100,000 cattle and 85,000 sheep graze public domain and National Forest rangelands in California. The outlook for the future is encouraging.

Profitable production of livestock is fostered by an expanding market, and growing population indicates continued high demand for meat and other livestock products.

Dairy farming in California is another substantial agricultural activity. Sales of cream and whole milk reach about $325 million a year, or about 12 percent of farm income in the State.

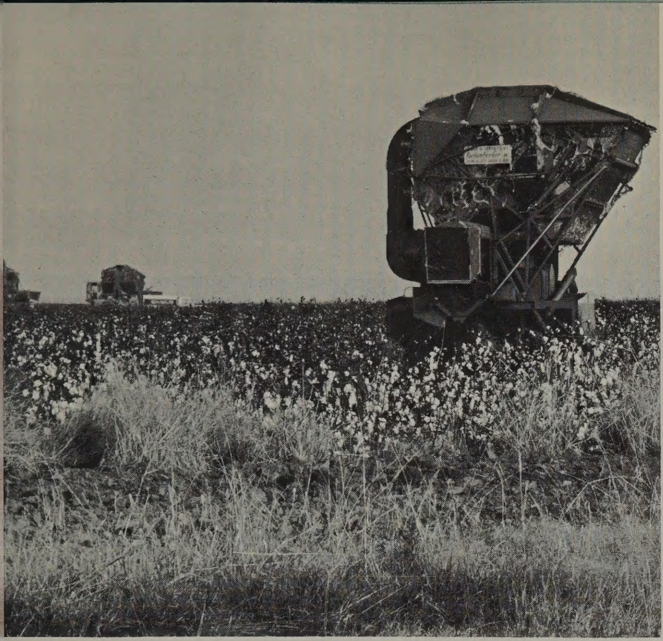
Land Resources

About 45 percent of the land in California is administered by Federal agencies. The Department of the Interior supervises a total of 16 million acres through such agencies as the Bureau of Land Management, the Bureau of Reclamation, and the National Park Service. The Forest Service of the Department of Agriculture administers 20 million acres reserved in National Forests. Slightly less than 4 million acres are under the control of the Department of Defense and the Atomic Energy Commission.

Land administered by the Bureau of Land Management serves a variety of uses. Oil, gas, and minerals are produced on some public domain lands. Besides grazing, other uses include wildlife habitat, recreation development, and home, industrial, and commercial sites. Timber is one of the most important of all the resources on public land.

California's forest lands cover approximately 42.5 million acres, or more than two-fifths of the State. About 17 million acres of this area is classified as commercial forest land capable of growing usable stands of wood. These forests contain about 360 billion board feet of standing sawtimber, enough wood to build 35 million new homes.

Privately owned forest lands total slightly



(Above) The rich soil and mild climate of the San Joaquin Valley make it a prime cotton-producing area. (Right) An irrigated pasture, the work of the Bureau of Reclamation, is the reason for this healthy flock.

more than 8 million acres. Another 9 million acres are in public ownership. National Forests take up a major portion of these 9 million acres and Bureau of Land Management, Bureau of Indian Affairs, and State timberlands make up the rest. The National Forests yield over 1.3 billion board feet of timber each year, most of which is processed lumber.

Timber Industry

For a number of years, California's big lumber industry has produced more lumber and plywood than any State except Oregon. Logging operations and lumber production have been pursued in California for more than a century. Forest industries provide major employment for more than half a million people and contribute close to $100 million annually to the State's economy.

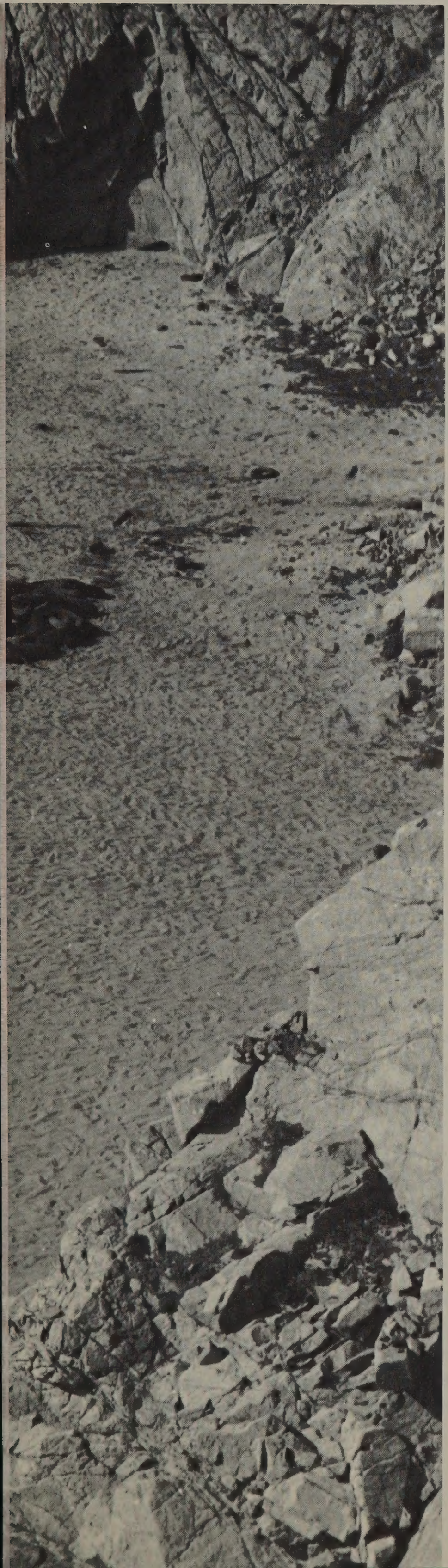
About half of California's 800 lumber mills are in the redwood region, and half in the pine belt. Nearly all of the Nation's commercial redwood lumber and four-fifths of its sugar pine comes from California. Much of the lumber is used for construction. Redwood products include outdoor furniture, fencing, and interior paneling. California produces about 3 million Christmas trees every year. Pine logs of several species are "peeled" to make plywood. Pulpwood for paper manufacture is another important forest product.

Sawmill operators in California process 27 species of wood. Douglas fir, ponderosa pine, redwood, and sugar pine are the most popular softwoods. Hardwoods include alder, walnut, Philippine mahogany, and several different kinds of oak.

The outlook for California's forest resources is bright. California's forests are no smaller today than they were a century ago when pioneer loggers first struck an axe to a tree. Enlightened forestry practices and management sustain the forest lands and keep them growing more productively each year. Private companies and Federal and State agencies spend millions of dollars a year controlling the damage due to forest pests and insects—a greater threat than fire. Continuing efforts to control and prevent losses from erosion, fire, water runoff, disease, and damaging insects will help assure ample forests resources for future generations.

A most distinctive part of California's wildlife is the sea lions, sporting on the beach at Point Reyes.

Fish and Wildlife



California is a sportsman's paradise—rich in fish and wildlife resources. From the mountain heights to the desert lowlands, birds, animals, and fish live in unique diversity. Big and small game ranging from squirrel and muskrat to bear and elk provide unequaled opportunities for hunting or for camera shooting.

Fish populate the upland streams and lakes of California in rare abundance. The State's Pacific shoreline gives commercial and marine sport fishermen access to salt-water fishes in varieties so widely different as rockfish and shark or as perch and tuna.

The vast fishery resources of California support the Nation's largest commercial fishing industry and provide a bonanza for sportsmen who fish for fun. There are 12 different kinds of trout, including the golden trout, famed for its beauty and recognized as the State fish. About 8,000 natural and artificial lakes and 26,000 miles of rivers and streams supply the needs of thousands of fresh-water fishermen each year.

Reservoirs built by Federal natural resource agencies offer fine fresh-water fishing for trout. Northern rivers like the Trinity are noted for salmon angling. To assure the continued abundance of California's fish, the State operates 17 fish hatcheries and the Fish and Wildlife Service of the Department of the Interior administers one hatchery.

Inshore fishing along the 1,200 miles of California coastline provides some 27 species: guitarfish, stingray, striped bass, California grunion, starry flounder, perch, rockfish, monkeyface eel, and others. The coast from Oregon to Mexico also has a great variety of fish and fishing areas, excellent boat-launching sites, and a wide selection of highly skilled boat operators. Among the offshore fish frequently caught are shark, salmon, halibut, sea bass, barracuda, mackerel, bluefin tuna, marlin, albacore, and lingcod.

California also has eight tide pool fishes commonly known to anglers, but many of these grow only a few inches in length and are seldom

Mule deer, noted for their long ears and extraordinary size, roam the western slope of the Sierra Nevada.

caught with hook and line. There are several species of sculpins, clingfish, blennies, klipfish, gobies, pricklebacks, gunnels, and snailfish.

Commercial Fishing

For nearly three decades landings of California's commercial fish have been first in value and usually first in tonnage among all fishing States. The Pacific sardine, tunas (albacore, bluefin, skipjack, and yellowfin), Pacific mackerel, jack mackerel, and northern anchovy have been caught primarily for canning. Bonito, yellowtail, salmon, herring, and shad roe have been canned in lesser amounts.

Species for the fresh and frozen fish market constitute 5 to 10 percent of the landings in California. These include flat fish—especially Dover, English, Petrale, and rex soles—several species of rockfish, barracuda, lingcod, sablefish, salmon, swordfish, and white sea bass. Nearly a dozen kinds of shellfishes are found in California waters; razor, little neck, beam, and Pismo clams; oysters, squids, and others. The taking of most shellfishes for profit or pleasure is regulated by the State to protect and conserve the resources.

California's fishery resources are greater than those actually being put to use. Some species are fished at levels below their potential yield, for example anchovy, rockfish, hake, and jack mackerel. Others, such as Pacific saury, are not fished at all. California fish landings, on a sustained yield basis, could be doubled if suitable uses could be found for underutilized species.

Distinctive Wildlife

California wildlife is distinctive. Birds in the State are often more slender and of lighter plumage than species in the East. California has fewer snakes and more lizards than other Western States. The upper Sonoran part of the State was once the native ground of the California grizzly bear, now extinct. The largest flying bird of the northern hemisphere, the California condor, still lives there but it, too, is rapidly disappearing. The California ring-tailed cat is one of the West's handsomest animals. California abounds with small nocturnal animals: kit foxes, jack rabbits, pocket mice, white-footed mice, and kangaroo rats. Squirrels and chipmunks are plentiful. In the highlands wolverines and weasels are common.

Hunting in California is a huge recreational asset. Over one-half million Californians are hunters, and visitors from other States increase

A colony of pelicans lives on Clear Lake, a hundred miles north of San Francisco.

the number sharply. Others who hunt with cameras, or who enjoy nature outings just to observe wild birds and animals in their natural habitat are equally aware of the extraordinarily high recreational value of California wildlife.

California has been the principal wintering ground for Pacific Flyway migratory ducks, geese, and swans since earliest recorded history. Hunters annually take close to 3 million ducks and more than 300,000 geese during the fall hunting season.

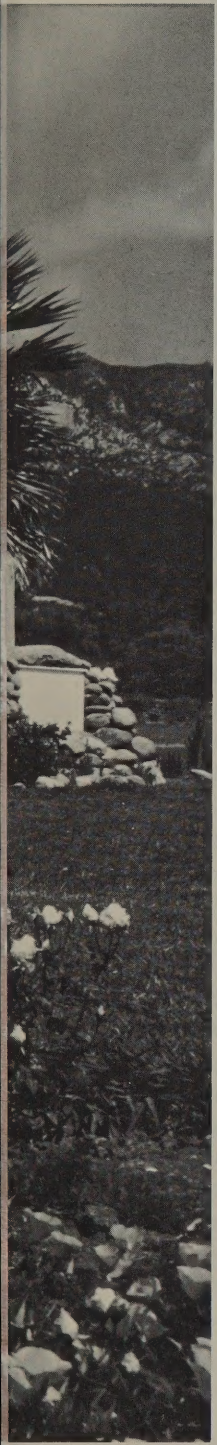
Deer is the most abundant and popular big game animal in California. Three types of American Elk, the Tule, Rocky Mountain, and Roosevelt, live in California. Though members of different species, these elk have many characteristics in common. California has no elk season, but special hunts on Tule elk are conducted in Owens Valley.

Pronghorn antelope live principally in Lassen and Modoc Counties, though Siskiyou and Shasta Counties have small bands. Occasionally pronghorn are found in Plumas and Sierra Counties. In Mono County there is a grazing herd estimated at more than 200. Bighorn, a wilderness species intolerant of human disturbance, have a wide distribution in the mountains of southern California. There are now about 2,500 head in the State. Desert bighorn range through Death Valley and the Mohave. Bear hunting has come into its own in California. Two varieties of black bear occur in the State: the northwestern and the Sierra Nevada.

The number of hunters in California seeking the ring-necked pheasant places this tasty bird at the top of all upland game bird popularity polls. The heart of the pheasant-hunting area of the State is in the Sacramento and San Joaquin Valley rice belts. The California quail, official State bird, and the mourning dove are the most common upland birds, producing the greatest annual harvest for the hunter's bag.

In the early days California was plundered of furs by many companies which were attracted by tales of untold riches in furs. Belated laws in 1910 and 1911 saved the fur seal and the sea otter from becoming extinct. Now the sleek and expensively dressed mammals are again found along the coast in substantial numbers. The current annual catch of furs in California ranges between 90,000 and 100,000 pelts, about 80 percent of which are muskrats. About 650 trapping licenses are sold annually. Some 100 people depend upon trapping as a livelihood; others look upon it as a hobby or as a source of supplemental income.

Santa Barbara Mission is a reminder of the hard Spanish mission life into which the South California Indians were drawn during the latter part of the 18th century.



Indians and Their Resources

Centuries before the Spanish conquistadores, the Indians of California lived in many small scattered bands, isolated from the rest of the continent by high mountains and broad deserts. It is estimated that there were some 150,000 Indians in the region—an aboriginal population only slightly less than the Pueblo area.

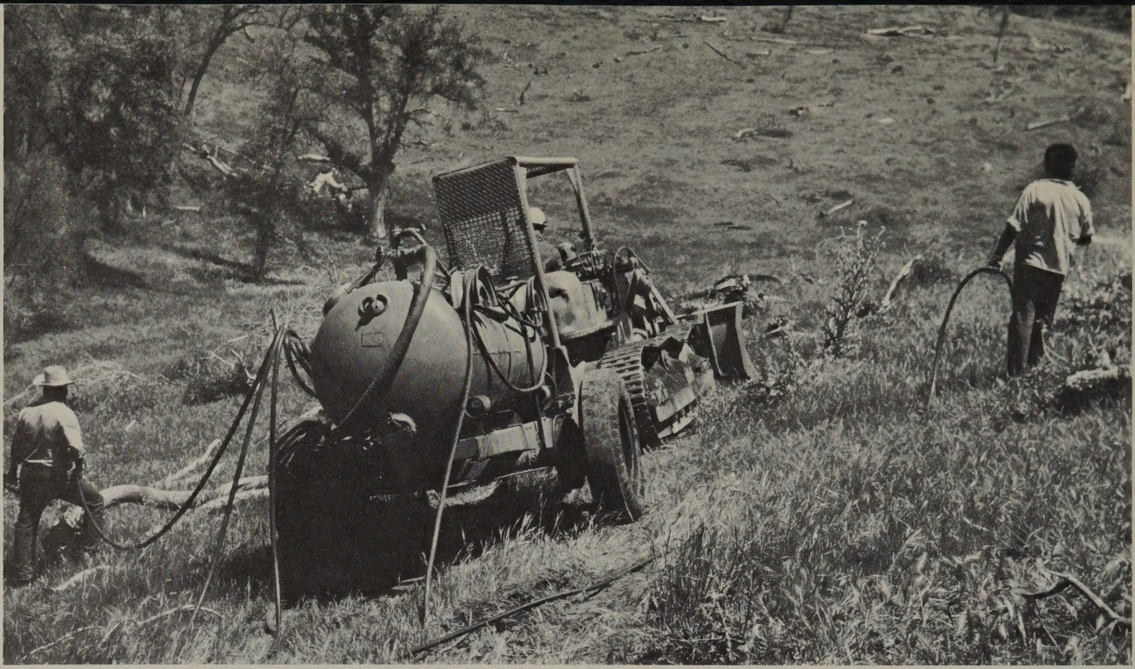
Their culture was simple. Most were food gatherers and hunters of small game who took no more than was needed to sustain life. They cultivated wild seeds, cleared and burned away brush, and worked hand in hand with nature to keep their lands bountiful. Extensive fishing occupied the Indians of northeast California.

Except for the Mohave and Yuma who possessed a considerable amount of tribal solidarity, the Indians of California did not live by the tribal concept. The village or "tribelet" was the real social unit. Each group attached itself to a single small area, moving only to harvest wild seeds to store for winter or to trade with neighbors. Each group knew its own boundary lines and respected those of others. For the most part, they lived in peace with one another and led quiet lives.

Non-Indian Influences

California's Indians have lived under three governments, Spanish, Mexican, and United States. Each of these governments recognized the rights of the Indians and attempted to deal fairly and justly with them, at least in theory, but their good intentions were never adequately administered.

Many Indians were held in peonage during the Spanish and Mexican regimes. The Spanish mission life into which the South California Indians were drawn cut their numbers by over 70 percent. For several decades after the United States acquired California, they were threatened with extinction by massacre and starvation. Spain conceded the validity of the Indians' right to use the land. Mexico recognized



Here a sprayer applies brush-killer to scattered, woody plants in an area converted to grass by the Indian owner.

the Indians as Mexican citizens. When California became part of the United States, Indians were to become citizens and their liberty and property rights were to be accorded full protection under the laws of their new government.

Despite these good motives, by 1860 the Indians of California were destitute, landless, and without any ratified treaties with the Federal Government. They remained in that unenviable position for the next 60 years until, in the early decades of the 20th century, the insistence of a church group prompted the Federal Government to purchase homesites, or rancherias, for the "landless Indians of California."

These were small, generally inadequate to support the residents, and scattered throughout the northern and central part of the State. Title to the lands was held by the Federal Government. Nevertheless, they were places to which the Indians could move, reasonably secure in the knowledge that no one could drive them away as they had so often been driven away from other homes.

Indians Today

California had a population of nearly 40,000 Indians in 1960 including a substantial number, particularly in the Los Angeles and San Francisco Bay areas, who moved in from other States. The great majority are fairly well assimilated into California life. Only about 9,000 reside on Indian lands of California. Among some reservation groups may be found some elements of traditional Indian culture and speakers of the various native languages.

Many years ago California recognized its obligation to serve Indians on reservations the same as other resident citizens. Accordingly, Bureau of Indian Affairs services and facilities were reduced or withdrawn depending on the proportion of State assistance. This first applied to education, then welfare, and finally, to law and order.

While many Federal services to Indians are the result of treaty obligations, there are no ratified treaties with California Indians. The primary function of the Indian Bureau in California today is the administration of Indian trust properties, chiefly land, belonging to individuals or groups. Federal trust responsibilities for Indian lands impose certain restrictions on the Indian owner relating to use and disposition of his land. Although trust land is exempt from taxation, the Indians cannot lease or sell it without first obtaining the consent of the Government.

Land Resources

The Indian lands of California, including about 465,000 acres in tribal ownership and 82,000 acres held in Federal trust for individual Indians, are widely scatterly over more than 100 separate reservations, rancherias, and public domain

Adult vocational training in Los Angeles is one of the major activities sponsored by the Bureau of Indian Affairs.

allotments. Most of the reservations and rancherias are used for homesites. At least 11 are currently unoccupied.

There are 11 principal California reservations, distinguished from the so-called rancherias and other entities because of their larger physical area and usually greater population.

In 1958, when Congress provided for termination of Federal responsibilities over Indian lands in California, the Indians of 41 California rancherias were given an opportunity to prepare plans for dividing among themselves the properties held in trust for them as a group by the Federal Government. Programs for the 41 areas are in various stages of preparation and completion. Federal trusteeship for 20 of these areas had been terminated by 1965.

Indian reservations in California contain timber resources that provide many benefits to the Indian owners. Forests cover 135,331 acres of reservation lands. While this is not a large forest area in relation to other forest land in the State, it is highly productive. The commercial total volume of reservation timber within California is 3 billion board feet.

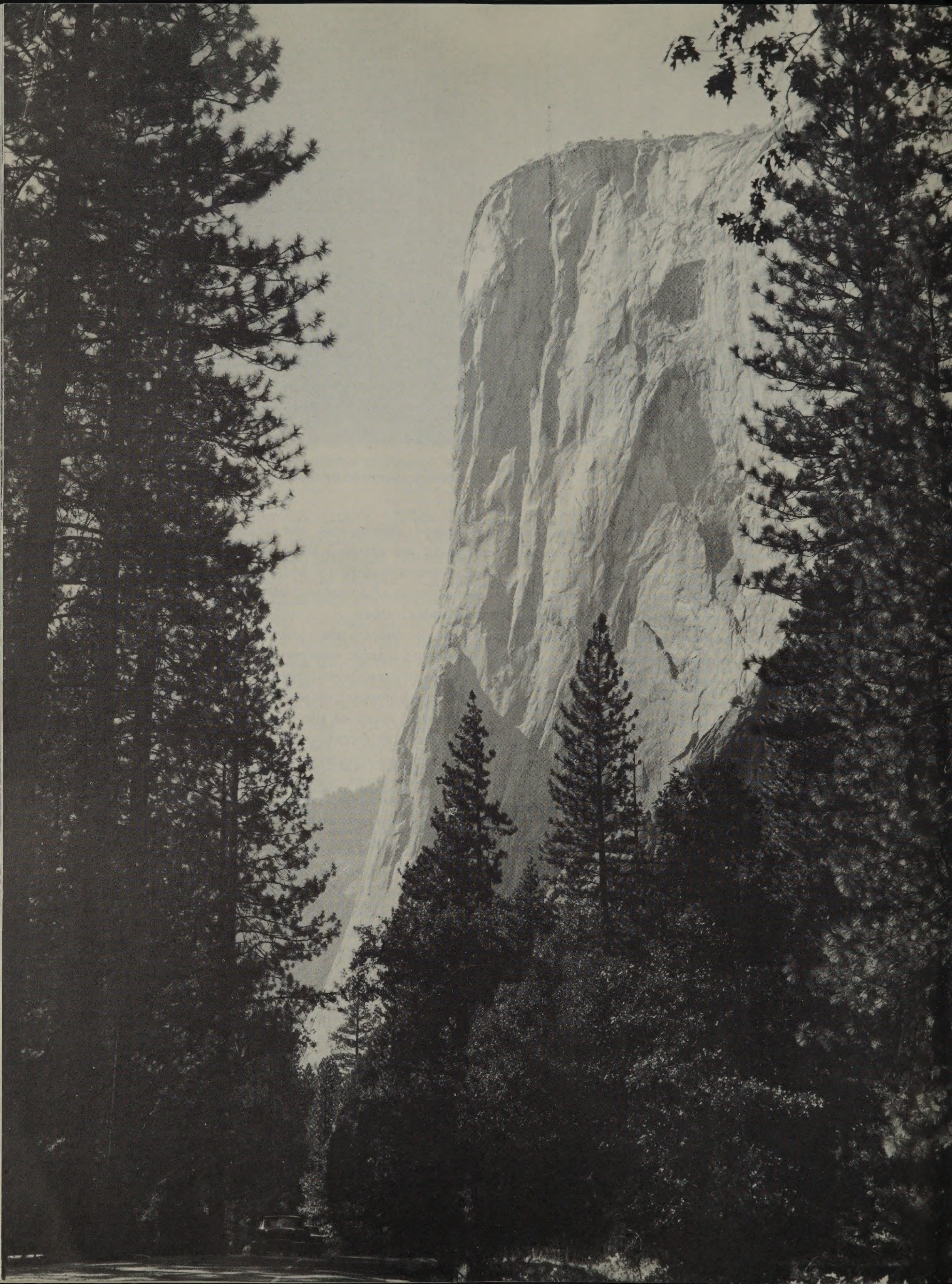
Other Indian Land Uses

The Indian lands of California include about 263,000 acres classified as range, roughly 96 percent of it tribally owned. These range areas are located on 12 reservations and rancherias scattered throughout the State, and provide grazing for about 5,570 head of cattle which are owned mainly by Indians. In most cases, the tribal land is used in common by the members without charge.

On the Indian reservations and rancherias of California a large number of irrigation projects have been established; but because of the rapid increase in population and the keen competition for water, many of the reservations and rancherias have in recent years diverted their water supplies from irrigation farming to domestic or commercial uses. Three areas—the Hoopa Valley, the Yuma, and the Coachella Valley Reservations—are still used substantially for irrigation farming.

The Agua Caliente Reservation—the famed Palm Springs resort—is the most highly developed of Indian-owned tourist areas in the Nation with a complex of hotels, restaurants, lodges, and golfing, swimming and other sports facilities.

Over 5,000 people visit Palm Springs every year. The Indian-owned land of Palm Springs comprises about half the area of the community, and the income to Indians from long-term leases of their lands plus percentage of gross profits provide substantial incomes to the Indian owners. Some of the land is tribally owned, including the mineral springs and canyon areas of the reservation, while the balance is individually owned.



Recreational Resources

California probably has the most extensively developed and varied outdoor recreational resources of any State in the United States. The State park system is unique—some 179 areas encompassing mountains, sandy beaches, lakes, rivers, deserts, plateaus, valleys, and historic sites.

The State boasts four magnificent National Parks, a National Seashore, and 8 other units of the National Park Service. The Forest Service's 17 National Forests draw about 15 million vacationers annually. The Corps of Engineers and the Bureau of Reclamation serve millions at manmade lakes behind water resource reservoirs. And, public domain lands, wildlife refuges, and county and municipal parks also serve recreational needs.

Despite this impressive inventory, recreational pressures in California are also among the greatest in the Nation. In 1964, before the $150 million recreational bond was voted by the electorate, State officials said, "In the simple terms, California has too little public shoreline and park lands, too few campsites and picnic sites for its more than 18 million people. And California gains more than 500,000 persons per year, all needing homes, places to work, highways—and especially open space."

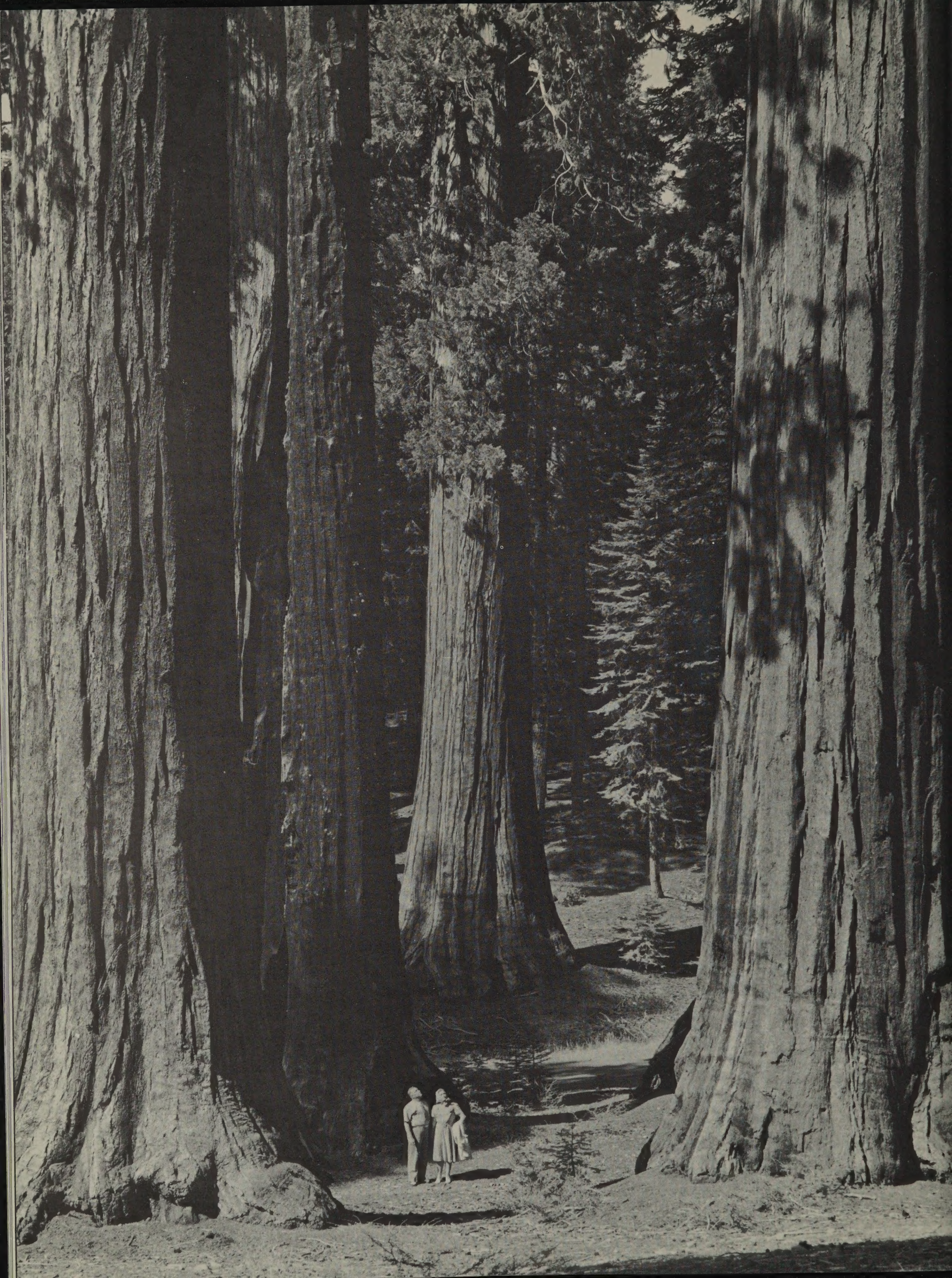
Yes, California's population is growing faster than new facilities can be provided, and available land for park use is disappearing rapidly. The pressures on California's splendid outdoor recreational resources typify the myriad of problems facing recreational planners throughout the Nation. Fortunately, the combined efforts of local, State, and Federal governments are being marshaled to provide the outdoor opportunities which are a "way of life" to Californians and their visitors.

Information tables listing major Federal, State, and local recreation areas in California and a location map appear at the end of this chapter. The acreage, type of visitor use, and outdoor activities available at the various parks, forests, and recreation sites can be found by reading across the table.

Yosemite National Park represents much of the splendor and magnificence of much of the California landscape.

National Parks and Monuments

Yosemite National Park, a scenic treasure preserved largely because of the efforts of naturalist



John Muir, contains such scenic wonders as the great granite shoulder of El Capitan, Bridal Veil Falls, the Three Brothers, Cathedral Rocks, Sentinel Rock, Yosemite Falls, North Dome, and Half Dome.

Located in the heart of the Sierra Nevada, Yosemite must be described in terms of giant sequoias, lofty waterfalls, high wilderness country, and unbelievable beauty. Over 200 bird and 78 mammal species live in Yosemite.

From the west, entrance to Yosemite is at Arch Rock, via California Route 140, and from the south at South Entrance, via Route 41. Both are open all year. The entrance from the east, through Tioga Pass via California Route 120, is closed during the winter.

Lassen Volcanic National Park, in northeastern California, preserves an area containing striking evidences of volcanic activity. Impressive Lassen Peak which stands at the southern end of the Cascade Range—the largest plug dome volcano in the world—last erupted in 1917. The park is covered with evergreen forests, grassy meadows, and recent lava flows.

Like all National Parks, Lassen is a sanctuary for animals.

The eastern wilderness and lake sections of the park can be enjoyed only by hikers and horseback parties and over 100 miles of trail lead to remote sections of the park. Ski slopes in the high country of the park have become increasingly popular.

The entrance to Lassen Volcanic National Park from the west is at Manzanita Lake, via California Routes 44 or 89, and from the southwest at Southwest Entrance, via California Route 36.

Sequoia and Kings Canyon National Parks lie across the heart of the lofty Sierra Nevada in east central California—an area of spectacular granite mountains, deep canyons, and magnificent forests. Though separately established, Sequoia and Kings Canyon are administered as a single park.

Here, the giant sequoias, largest of all living things, reach their greatest size and are found in largest numbers. They are among the longest lived trees, and are known to exceed 3,000 years in age.

Sequoia National Park is entered from the west at Ash Mountain Entrance, via California Route 198. Kings Canyon National Park is also entered from the west via Big Stump Entrance on California Routes 180 or 198, and 65.

Point Reyes National Seashore, only 30 miles northwest of San Francisco, is now being acquired by the Federal Government for administration by the National Park Service. Ultimately, the seashore will feature campgrounds, picnic sites, beach-access areas, scenic overlooks, and wildlife exhibit areas.

Public use of Point Reyes will be limited until adequate facilities have been provided. When these are available, the public will find one of the most inspiring areas ever dedicated to man's enjoyment—tall cliffs pounded ceaselessly by the impatient sea, lagoons and esteros enclosed by sand dunes and rolling hills, bird rookeries and sea-lion herds on offshore rocks, and the "white cliffs of Albion" sighted by Sir Francis Drake.

The principal route to Point Reyes National Seashore is State Highway No. 1 from which a road leads to a Coast Guard lighthouse.

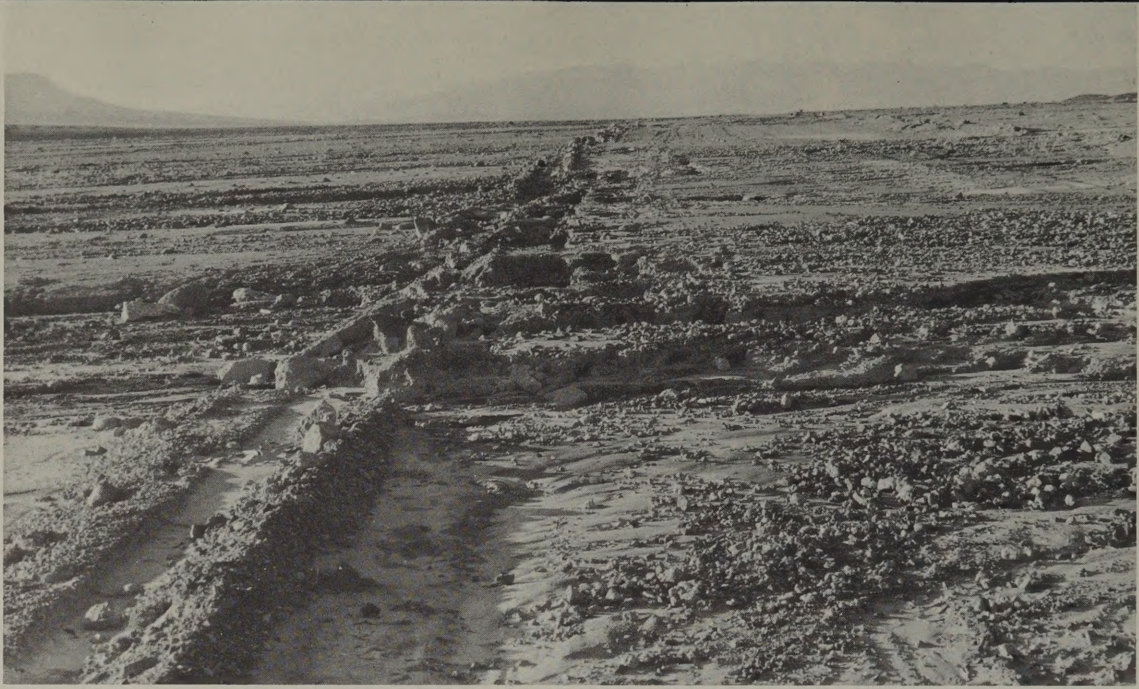
Cabrillo National Monument, in the city of San Diego, commemorates the discovery of the coast of California by Juan Rodriguez Cabrillo in 1542. Point Loma, on which the monument is located, and San Diego Bay, which he called San Miguel Bay, mark the first contact of Europeans with this part of the New World.

The Old San Diego lighthouse on Point Loma is the principal historic structure in the area. A statue of Cabrillo, the work of one of Portugal's distinguished sculptors, Alvaro de Bree, was a gift to California from Portugal.

Cabrillo Memorial Drive—Off U.S. 101—leads to the monument.

Channel Islands National Monument is composed of the two smallest of the eight channel islands—Anacapa and Santa Barbara. These islands preserve and protect many outstanding examples of nature's adaptations in the plant and animal worlds. Here also is a sanctuary for numerous marine mammals and nesting sea birds, and for

California's giant, cinamon-colored trees, the sequoias, are probably the oldest living things in the world.



The Black Mountains, Funeral Range, Furnace Creek, and Tarantula Gulch belie their macabre names by attracting thousands of visitors to Death Valley yearly.

a number of plant and animal forms found nowhere else in the world.

The Channel Islands are reached by boat only. Transportation to Anacapa Island is available daily during the summer—and on weekends during other times of the year—from Port Hueneme, Calif.

Lava Beds National Monument is a region of comparatively recent lava flows and was the principal scene of the Modoc Indian War of 1872–73, the last important war of its kind fought in California.

Near Tionesta, the monument may be reached at the northeast entrance off U.S. Route 97 and State Route 139, and at the southeast by State Route 232.

Muir Woods National Monument, named in honor of John Muir, noted naturalist, preserves a virgin stand of redwoods just north of San Francisco. It is the only area in the National Park System which contains trees of this species. The monument occupies 491 acres at the south foot of Mount Tamalpais.

The headquarters area is reached via Muir Woods Road, off California Route 1.

Pinnacles National Monument, established to preserve the unusual mass of spires and crags which rise 500 to 1,200 feet against the sky, contains the remains of a volcanic mountain formed millions of years ago by massive lava flows and eruptions. The monument area is 4 miles wide at its greatest east to west width and 7 miles long, north to south.

The entrance station is off California Route 25.

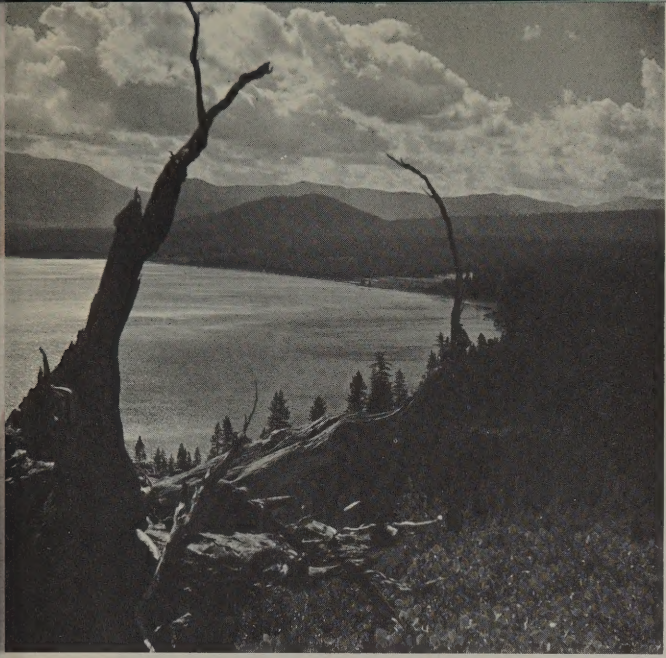
Devils Postpile National Monument lies in a magnificent forest and lake country southeast of Yosemite National Park. It preserves many interesting geologic features formed up to 100,000 years ago during periods of glaciation and volcanic activity. The central feature of the monument is the postpile, an extraordinary formation of blue-gray basaltic columns, remnants of a lava flow, which rise as high as 60 feet and fit closely together like the pipes of a great organ. On top is a striking mosaic-like surface of glacial polish.

At Rainbow Falls, the Middle Fork of the San Joaquin River makes a sheer drop of 140 feet into a deep-green pool.

Entry to the monument is through the ranger station, on the eastern boundary.

Death Valley National Monument, covering almost 2 million acres, is distinguished by its rugged desert scenery—a combination of unusual geology, flora, fauna, and climate. Inhabited for centuries by Indians and famed as a scene of suffering in the gold rush of 1849, Death Valley has long been known to scientists and laymen alike as a region rich in scientific and human interest.

At 282 feet below sea level, Badwaters is the lowest point in the Western Hemisphere.



(Above) Sweet smelling pines and sandy beaches surround Lake Tahoe. (Right) The Devil Postpile is really lava that has been cracked into long pillers.

Many species of reptiles and small mammals live in Death Valley and surrounding elevations, and plants are found almost everywhere. With its adverse living conditions, the area is famous for its numbers of rare species possessing strange mechanisms for surviving in the burning heat and dryness.

Death Valley can be reached from the north, south, and east by several roads.

Joshua Tree National Monument, located in beautiful high country, preserves an outstanding example of a Western desert community. Lying within both the Mohave and the Colorado Deserts, at an altitude ranging from 1,000 feet in the east to 6,000 feet in the Little San Bernardino Mountains, the area has geologic interest as well as an exceptional variety of plant and animal life. The sands may be covered with millions of wild flowers and colorful cactuses; many rare species of plants, such as the grotesque Joshua-tree itself, are also prevalent. Numerous kinds of birds, reptiles, rodents, and larger animals have acquired specialized habits for living in this desert environment.

The principal access to the monument is through the north entrance by way of Twentynine Palms Highway.

National Forests

The 20 million acres of national forest land in California administered by the U.S. Department of Agriculture's Forest Service offer outdoor recreation opportunities in addition to other bountiful natural resources. Visitors come to these national forests annually to hunt, fish, camp, picnic, swim, ski, or just to relax in the outdoors.

Following are California's National Forests and their outstanding attractions:

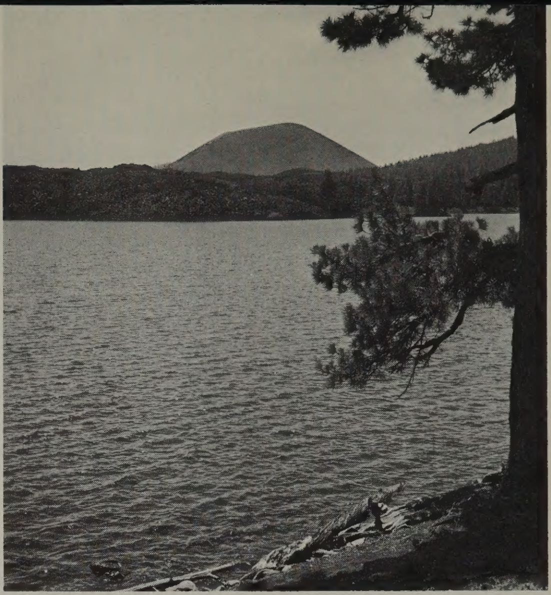
Angeles, with headquarters at Pasadena, includes mountains adjoining the Los Angeles metropolitan area, such as Old Baldy Peak, 10,000 feet. Devil Canyon-Bear Canyon Wild Area comprises over 35,000 acres of the forest. Riding and hiking trails, fishing, hunting, swimming and boating facilities can be enjoyed. There are 11 ski areas and 113 campgrounds and picnic sites.

Major access routes are U.S. Highways 6, 66, 99; and State Highways 2 and 39.

Cleveland, with headquarters at San Diego, has the world's largest reflecting telescope at Palomar Observatory on Mount Palomar. Included in the forest is Agua Tibia Primitive Area of nearly 26,000 acres. Warm-water fishing and duck hunting on the impounded lakes of the water systems and deer and quail hunting are available. 27 campgrounds and picnic sites are maintained.

Major access highways are U.S. 101, 395, 80; State 78, 79, 71, and 74.

Assailed by the sea, Anacapa is slowly disappearing.



Lassen is the only recently active volcano in the U.S.

Eldorado, with headquarters at Placerville, has within its area mountains in the Sierra Nevada and hundreds of mountain lakes including the south shore of spectacular Lake Tahoe. This is California gold rush country, the site of Sutter's Mills and the famous Mother Lode mining communities. Part of the area consists of Desolation Valley Primitive Area containing over 41,000 acres. Activities include lake and stream fishing, deer and bear hunting, riding trails, wilderness trips. There are 43 campgrounds and picnic sites; 8 developed ski areas.

Major access roads are U.S. 50 and State 88.

Inyo, with headquarters at Bishop, includes part of the High Sierra Primitive Area; 9,000 acres of the Hoover Wild Area; and 43,000 acres of the Mt. Dana-Minarets Primitive Area. Palisade Glacier is the southernmost glacier in the United States. Ancient Bristlecone Pine Forest Botanical Area contains many 4,000-year-old trees—the oldest living things on earth. Mount Whitney, 14,495 feet, is the highest point in the contiguous continental United States.

Major access routes are U.S. Highways 395, 6; and the State Highway 168.

Klamath with headquarters in Yreka, contains Marble Mountain Wilderness Area, and over 28,000 acres of the Salmon Trinity Alps Primitive Area. High mountain lakes and streams provide great scenic beauty in a wild setting; here there is steelhead and salmon fishing and deer hunting. Hiking, riding, pack trips, 30 campgrounds and picnic sites may also be enjoyed.

Major access routes are U.S. Highway 99, and State Highways 96 and 97.

Lassen, near Susanville, comprising Caribou Peak Primitive Area and Thousand Lakes Wild Area, has volcanic lava flow tubes, hot springs, and mud pots. Other attractions include Indian pictographs and hieroglyphics, old emigrant trails, lake and stream fishing, deer and bear hunting, riding and hiking trails, 58 campgrounds and picnic sites, and five ski areas.

Major access highways are U.S. 395 and State 36 and 89.

Los Padres including San Rafael Primitive Area and the Ventana Primitive Area has headquarters at Santa Barbara. Quail, pigeon, deer, and wild boar hunting, trout fishing, scenic drives, oceanside camping, wilderness trips, 305 campgrounds and picnic sites, and 2 ski areas make this area a major recreation site.

Major access routes are U.S. Highways 101, 99, 399; State Highways 1, 166, 150, and 178.

Mendocino, with headquarters at Willows, has part of the Yolla Bolly-Middle Eel Wilderness Area. The coast range of California with peaks up to 8,600 feet and lake country provide hunting, fishing, saddle and pack trips, 43 campgrounds and picnic areas.

Major access routes are U.S. Highways 99w and 101; and State Highway 20.

Modoc, with headquarters in Alturas, includes the South Warner Primitive Area. Glass Mountain lava flows and the scene of Modoc Indian wars are here, as well as the winter range of interstate deer herds and Clear Lake Reservoir migratory bird refuge. Visitors may take

El Capitan (left) and Cathedral Rocks (right) rise above the forested valley of Yosemite National Park.

advantage of stream and lake fishing; mule deer and waterfowl hunting; 23 campgrounds and picnic sites; 1 ski area.

Major access routes are U.S. Highways 299 and 395; and State Highway 139.

Plumas, with headquarters in Quincy, in beautiful Feather River country includes Feather Falls, one of the highest and most picturesque waterfalls in the United States. Historic gold mining areas of La Porte, Johnsville, and Rich Bar; limestone caves; beautiful mountain valleys; lake and stream fishing; deer, bear, geese, duck quail, and dove hunting; 31 campgrounds and picnic areas; and 1 ski area are among the attractions.

Major access routes are U.S. Highways 40A, 395; and State Highways 89, 24.

San Bernardino, with headquarters in San Bernardino, contains Cucamonga Wild Area, San Gorgonio Wild Area, and the San Jacinto Wild Area. Here are the highest mountains in southern California—San Gorgonio, 11,485 feet and six others more than 10,000 feet. Attractions include lake and stream fishing, deer hunting, pack trips, 60 campgrounds and picnic sites, and 6 ski areas.

Major highways through this forest are U.S. Routes 60, 70, 99, 66, and 395; State Routes 2, 18, and 74.

Sequoia, with headquarters in Porterville, includes part of the High Sierra Primitive Area. Giant sequoia bigtrees, Mineral King Game Refuge, high mountain lakes, and fishing streams offer recreation such as big game hunting, wilderness hiking, riding, swimming, and boating. There are 59 campgrounds and picnic sites and 1 ski area.

Major access highways are U.S. 395 and State 190.

Shasta-Trinity, two National Forests administered as one unit with headquarters at Redding, offers part of the Salmon Trinity Alps Primitive

Area and the Yolla Bolly-Middle Eel Wilderness Area. Beautiful Mount Shasta, 14,162 feet with eternal snow and five living glaciers, overlooks Shasta and Trinity lakes which have outstanding boating facilities. Lava beds, Glass Mountain, and Castle Crags are geologic curiosities. Waterfowl, upland birds, deer and bear provide big and small game hunting. There are riding trails in the wilderness, 89 campgrounds and picnic sites, and 2 ski areas.

Major access routes are U.S. 290, 99; State 44, 96, and 89.

Sierra, with headquarters in Fresno, includes part of the High Sierra Primitive Area and the Mt. Dana-Minarets Primitive Area. Nelder and McKinley Groves of giant sequoia and part of the John Muir Trail are located here. Huntington Lake, Florence Lake, Shaver Lake, Dinkey Creek, and Bass Lake recreation areas offer lake and stream fishing, deer, bear, and quail hunting, 94 picnic and campground sites and 1 ski area.

Major access highways are U.S. Route 99; State Routes 168, 180, and 41.

Six Rivers, with headquarters in Eureka, has giant coast redwood and fir forests and Klamath, Smith, Eel, and Mad Rivers. Sportsmen may fish for trout, steelhead, and salmon; and hunt deer and bear.

Access is by U.S. Highways 101 and 299; and State Highways 36 and 96.

Stanislaus, with headquarters in Sonora, offers emigrant Basin Primitive Area, the nearest high mountain country to San Francisco Bay region and a portion of San Joaquin Valley with elevations ranging from 1,000 to 11,575 feet. Deep canyons are cut by the Merced, Tuolumne, Stanislaus, and Mokelumne Rivers. This is gold rush country. Calaveras Bigtree National Forest is incorporated with the Stanislaus. Scenic drives, saddle and pack trips, winter sports are available as well as 52 campgrounds and picnic sites and 1 ski area.

Access is via U.S. Routes 99, 395; State Routes 4, 108, and 120.

Tahoe has its headquarters in Nevada City, Calif., and with Squaw Valley, site of the 1960 Winter Olympics, offers outstanding facilities and conditions for winter sports. Lake and stream areas include the northwest shore of famed Lake Tahoe. Attractions include scenic drives through historic gold mining towns, 47 campgrounds and picnic sites, lake and stream fishing, hunting for deer and bear, riding trails, 7 winter sports and ski areas.

Major access highways are U.S. 40; State 20, 49, and 89.

Recreation at Reservoirs

Fourteen outdoor recreational developments are adjuncts of U.S. Army Corps of Engineer projects in California.

Boat-launching ramps, picnic areas, swimming beaches, campgrounds, and other public-use facilities are offered. At other normally dry reservoirs, arrangements have been made for local communities to develop equestrian and hiking trails, little league baseball facilities, model airplane fields, and golf courses.

Corps recreational areas include Brea Creek Reservoir, Lake Mendocino, Hansen Reservoir, Folsom Reservoir, Englebright Basin, Isabella Reservoir, North Fork Basin, Pine Flat Reservoir, Prado Reservoir, Sepulveda Reservoir, Santa Fe Reservoir, Success Reservoir, Terminus Reservoir, and the Whittier Narrows Reservoir.

The Department of Interior's Bureau of Reclamation has built many multi-purpose projects which are now being used for recreation as well as irrigation and flood control. These include Cachuma Reservoir, Delano Reservoir, Folsom Lake, Millerton Lake, Keswick Reservoir, Lake Natoma, San Luis Wasteway, Shasta Lake, Jenkinson Lake, Trinity Lake, Clear Lake, Lower Klamath Lake, Tule Lake, East Park Reservoir, Stony George Reservoir, Lake Berryessa, Lake Solano, Boca Reservoir, and Casitas Reservoir. About 7 million persons annually visit Bureau installations in California to fish, camp, swim, waterski, boat, hunt, and picnic.

Wildlife Refuges

There are many national wildlife refuges in California, some organized into groups, others administered singly. These refuges which protect waterfowl, upland game birds, desert bighorn, and sea birds are popular.

State public hunting areas total some 241,000 acres. These include waterfowl areas, cooperative pheasant areas, two State deer ranges, and State forests where hunting is permitted.

Natural or artificial lakes of more than 5 acres amount to a conservative estimate of 8,000. The recent expansion of the farm pond and reservoir system will likely increase this figure.

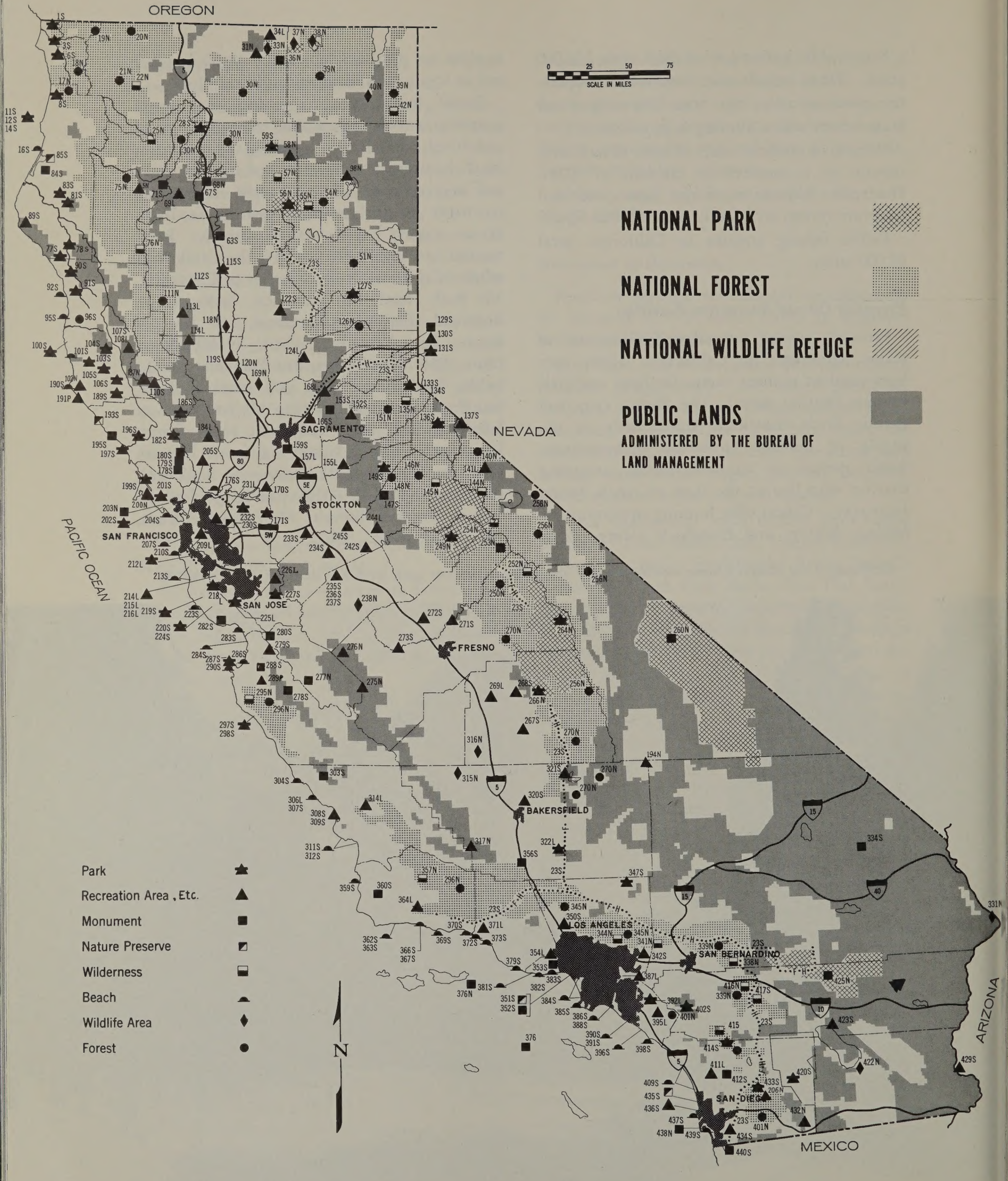
Public fishing streams in California total 26,000 miles.

Privately Owned Recreation Facilities

Privately owned recreation facilities are of major importance in California. These vary from resident summer camps for boys and girls to fine hunting areas. The State's crop and pasture lands contribute significantly to the supply of outdoor recreation opportunities. Some operate as vacation farms, accepting tourists who live at the farm or ranch during their stay. Others offer hunting opportunities, fishing, hiking, and horseback riding; guide services are provided by some. Many lease or sell as scenic sites for home and camp lots.

Travel bureaus and agencies, commercial organizations such as gasoline companies, motel and hotel associations, airlines, and railroads; local chambers of commerce; and outdoor clubs and organizations all can supply information on many of the privately owned facilities. Local inquiry will reveal others. Information is available from the following offices: California State Chamber of Commerce, 350 Bush Street, San Francisco, Calif., 94104; Redwood Empire Association, 46 Kearney Street, San Francisco, Calif., 94108; Sierra Club, 1050 Mills Tower, San Francisco, Calif., 94104; Californians, Inc., 703 Market Street, San Francsico, Calif., 94103; All-Year Club of Southern California, 628 West Sixth Street, Los Angeles, Calif., 90017; California Mission Trails Association, 6912 Hollywood Boulevard, Los Angeles, Calif., 90028; San Diego Convention & Tourists Bureau, 924 Second Avenue, San Diego, Calif., 92101.

California is not always a warm weather State; many parks are favorite spots for skiing, sleighing, and ice-skating.


OREGON
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ARIZONA
MEXICO
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SAN BERNARDINO
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NATIONAL PARK
NATIONAL FOREST
NATIONAL WILDLIFE REFUGE
PUBLIC LANDS
ADMINISTERED BY THE BUREAU OF LAND MANAGEMENT
Park
Recreation Area, Etc.
Monument
Nature Preserve
Wilderness
Beach
Wildlife Area
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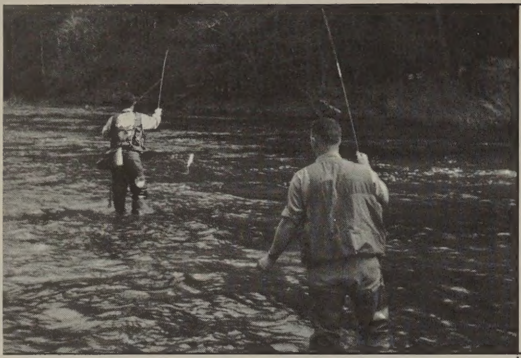
California Outdoor Recreation Guide

How To Use This Guide

Information on major areas offering recreation in Calif. is given in the listings on the following pages. Each area can be located on the map at left by matching its number (as 56 N) with the corresponding number on the map. Symbols on the map represent types of areas. Letters after the numbers refer to Federal (N), State (S), local (L), and quasi-public and private (P). Only major interstate highways and major cities are shown on the map. A road map will provide exact routes to those areas you may wish to visit.

	Number on map	Acreage		Type of use				Activities									
		Total land and water within area	Water surface (7)	Day and weekend	Vacation	Out-of-State target	Tourist en route	Picnicking	Hiking and riding	Camping	Boating	Swimming	Fishing	Hunting	Nature study	Winter sports	Wilderness experience
FEDERAL																	
Parks:																	
Lassen Volcanic National Park	56N	106, 125	....	x	x	x	x	x	x	x	. .	. .	x	. .	x	x	x
Yosemite National Park	249N	758, 112	....	x	x	x	x	x	x	x	. .	. .	x	. .	x	x	x
Kings Canyon National Park	264N	453, 768	....	x	x	x	x	x	x	x	. .	. .	x	. .	x	. .	x
Sequoia National Park	266N	385, 419	....	x	x	x	x	x	x	x	. .	. .	x	. .	x	. .	x
Seashores:																	
Point Reyes	200N	53, 000	....	x	x	x	x	x	x	x	x	x	x	x	x	. .	. .
Cooperative Land and Wildlife Management Areas (BLM):																	
Mount Dome National Cooperative Land and Wildlife Management Area	31N	22, 275	....	x	x	. .	. .	. .	x	x	. .	. .	. .	x	. .	. .	. .
Cinder Cone National Cooperative Land and Wildlife Management Area	58N	27, 499	....	x	x	. .	. .	. .	x	x	. .	. .	. .	x	. .	. .	. .
New Idria National Cooperative Land and Wildlife Management Area	275N	62, 779	....	x	x	. .	. .	. .	x	x	. .	. .	. .	x	. .	. .	. .
Panoche National Cooperative Land and Wildlife Management Area	276N	50, 248	....	x	x	. .	. .	. .	x	x	. .	. .	. .	x	. .	. .	. .
Tremblor National Cooperative Land and Wildlife Management Area	317N	57, 750	....	x	x	. .	. .	. .	x	x	. .	. .	. .	x	. .	. .	. .
McCain Valley National Cooperative Land and Wildlife Management Area	432N	38, 692	....	x	x	. .	. .	. .	x	x	. .	. .	. .	x	. .	. .	. .
Monuments:																	
Scientific:																	
Lava Beds National Monument	36N	46, 239	....	x	x	x	x	x	x	x	. .	. .	. .	. .	x	. .	. .
Muir Woods National Monument	203N	585	....	x	. .	x	x	x	. .	. .	. .	. .	. .	. .	x	. .	. .
Devils Postpile National Monument	253N	798	....	x	x	x	x	x	. .	x	. .	. .	x	. .	x	. .	. .
Death Valley National Monument (California portion)	260N	1, 763, 848	....	x	x	x	x	x	x	x	. .	. .	. .	. .	x	. .	x
Pinnacles National Monument	277N	13, 618	....	x	x	x	x	x	x	x	. .	. .	. .	. .	x	. .	. .

See footnotes at end of table.

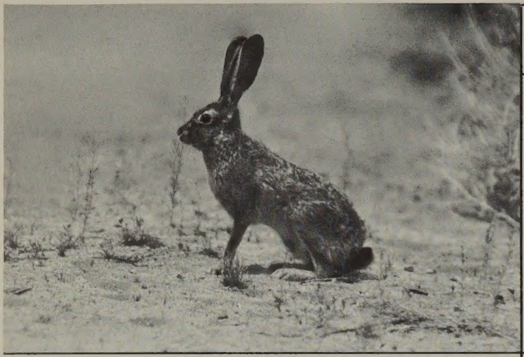


	Number on map	Acreage		Type of use				Activities									
		Total land and water within area	Water surface (7)	Day and weekend	Vacation	Out-of-State target	Tourist en route	Picnicking	Hiking and riding	Camping	Boating	Swimming	Fishing	Hunting	Nature study	Winter sports	Wilderness experience
FEDERAL—Continued																	
Monuments—Continued																	
Scientific—Continued																	
Channel Islands National Monument	376N	18, 167	....	x	..	x	..	..	x	x	x	x	x	..	x	..	..
Joshua Tree National Monument	425N	505, 082	....	x	x	x	x	x	x	x	..	..	..	..	x	..	..
Historic: Cabrillo National Monument	438N	81	....	x	..	x	x	x	..	x	..	..	..	..	..	..	..
Forests:																	
Northern Redwoods Purchase Unit	17N	14, 491	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Six Rivers National Forest	18N	935, 266	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Siskiyou National Forest (California portion)	19N	31, 740	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Rogue River National Forest	20N	49, 261	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Klamath National Forest	21N	1, 667, 669	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Shasta National Forest	30N	986, 585	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Modoc National Forest	39N	1, 688, 789	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Plumas National Forest	51N	1, 147, 415	....	x	x	..	x	x	x	x	x	x	x	x	x	x	x
Lassen National Forest	54N	1, 667, 669	....	x	x	..	x	x	x	x	x	x	x	x	x	x	x
Trinity National Forest	75N	1, 051, 173	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Mendocino National Forest	111N	867, 433	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Tahoe National Forest	126N	694, 123	....	x	x	..	x	x	x	x	x	x	x	x	x	x	x
Toiyabe National Forest (California portion)	140N	629, 745	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Stanislaus National Forest	146N	895, 820	....	x	x	..	x	x	x	x	x	x	x	x	x	x	x
Calaveras Big Trees National Forest	148N	379	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Eldorado National Forest (California portion)	151N	640, 872	....	x	x	..	x	x	x	x	x	x	x	x	x	x	x
Sierra National Forest	250N	1, 295, 745	....	x	x	..	x	x	x	x	x	x	x	x	x	x	x
Inyo National Forest (California portion)	256N	1, 774, 236	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Sequoia National Forest	270N	1, 118, 508	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Los Padres National Forest	296N	1, 749, 082	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
San Bernardino National Forest	339N	613, 886	....	x	x	..	x	x	x	x	x	x	x	x	x	x	x
Angeles National Forest	345N	648, 739	....	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Cleveland National Forest	401N	391, 312	......	x	x	..	x	x	x	x	..	..	x	x	x	x	x
Wilderness (Forest Service):																	
Marble Mountain Wilderness Area	22N	243, 561	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Salmon-Trinity Alps Wilderness Area	25N	281, 684	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
South Warner Wild Area	42N	16, 320	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Caribou Peak Wild Area	55N	17, 600	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Thousand Lake Valley Wild Area	57N	16, 320	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Middle Eel-Yolla Bolly Wilderness Area	76N	111, 097	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Desolation Valley Wild Area	135N	43, 000	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Hoover Wild Area	144N	77, 400	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Emigrant Basin Wild Area	145N	109, 400	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
High Sierra Wilderness Area	252N	509, 369	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Mount Dana-Minarets Wild Area	254N	82, 181	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Ventana Wild Area	295N	55, 884	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
San Gorgonio Wild Area	338N	34, 700	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x

See footnotes at end of table.

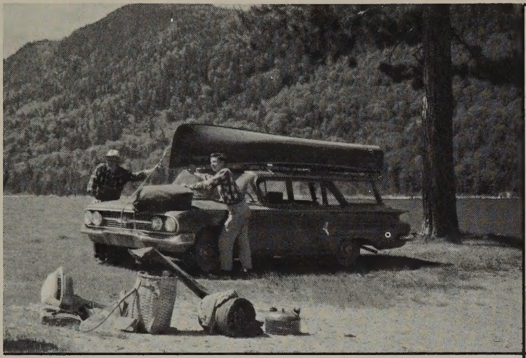
	Number on map	Acreage		Type of use				Activities									
		Total land and water within area	Water surface (7)	Day and weekend	Vacation	Out-of-State target	Tourist en route	Picnicking	Hiking and riding	Camping	Boating	Swimming	Fishing	Hunting	Nature study	Winter sports	Wilderness experience
FEDERAL—Continued																	
Wilderness (Forest Service): —Continued																	
Cucamonga Wild Area	341N	5, 984	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Devil's Canyon-Bear Canyon Wild Area	344N	35, 270	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
San Rafael Wild Area	357N	74, 160	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Agua Tibia Wild Area	415N	27, 234	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
San Jacinto Wild Area	416N	23, 046	....	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Wildlife areas:																	
Lower Klamath National Wildlife Refuge (California portion)	33N	21, 460	11, 590	..	..	..	..	..	..	..	x	..	..	..	x	..	..
Tulelake National Wildlife Refuge	37N	37, 337	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Clear Lake National Wildlife Refuge	38N	33, 559	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Modoc National Wildlife Refuge	40N	5, 966	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Sacramento National Wildlife Refuge	118N	10, 776	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Colusa National Wildlife Refuge	120N	4, 040	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Sutter National Wildlife Refuge	169N	2, 591	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Merced National Wildlife Refuge	238N	2, 562	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Kern National Wildlife Refuge	315N	10, 544	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Pixley National Wildlife Refuge	316N	4, 244	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Havasu National Wildlife Refuge (California portion)	331N	19, 105	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Salton Sea National Wildlife Refuge	422N	37, 327	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Imperial National Wildlife Refuge (California portion)	422N	18, 081	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Public lands (2):																	
Douglas City	5N	40	5	x	..	x	x	x	..	x	..	x	x	..	x	..	..
Eagle Lake	98N	401	23, 000	x	x	x	..	x	x	x	x	x	x	x	x	..	..
King Range	102N	33, 000	....	x	x	x	..	x	x	x	x	x	x	x	x	..	x
Cow Mountain	187N	50, 000	....	x	x	..	..	x	x	x	..	..	..	x	x	..	..
Chimney Peak	194N	51, 000	600	x	x	x	..	x	x	x	..	x	x	x	x	..	x
McCain Valley	206N	38, 700	....	x	..	..	x	x	x	x	..	..	..	x	x	..	x
STATE																	
Parks:																	
Pelican Beach State Park	1S	5	....	x	x	..	x	x	..	..	..	..	x	..	..	..	..
Jedediah Smith Redwoods State Park	3S	9, 539	....	x	x	..	x	x	x	x	..	x	x	..	x	..	..
Del Norte Coast Redwoods State Park	6S	5, 833	....	x	x	..	x	x	x	x	..	..	x	..	x	..	..
Prairie Creek Redwoods State Park	8S	9, 568	....	x	x	..	x	x	x	x	..	..	x	..	x	..	..
Dry Lagoon Beach State Park	11S	927	....	x	x	..	x	x	..	x	..	..	x	..	..	..	..
Patrick's Point State Park	12S	425	....	x	x	..	x	x	..	x	..	x	x	..	x	..	..
Trinidad Beach State Park	14S	20	....	x	x	..	x	x	..	..	..	..	x	..	..	..	..

See footnotes at end of table.



		Acreage		Type of use				Activities									
	Number on map	Total land and water within area	Water surface (7)	Day and weekend	Vacation	Out-of-State target	Tourist en route	Picnicking	Hiking and riding	Camping	Boating	Swimming	Fishing	Hunting	Nature study	Winter sports	Wilderness experience
STATE—Continued																	
Parks—Continued																	
Castle Crags State Park	28S	5, 331		x		x	x	x	x	x		x	x		x		
McArthur-Burney Falls Memorial State Park	59S	565	M	x	x		x	x	x	x	x	x	x		x		
Richardson Grove State Park	77S	761		x	x		x	x	x	x		x	x		x		
Benbow Lake State Park	78S	217	6, 400		x		x	x		x	x	x	x		x		
Grizzly Creek Redwoods State Park	81S	150		x	x		x	x	x	x	x	x	x		x		
Humboldt Redwoods State Park	83S	23, 464		x		x	x	x	x	x		x	x		x		
Standish-Hickey State Park	90S	635		x	x		x	x	x	x		x	x				
Admiral William H. Standley State Park	91S	45		x	x		x										
Russian Gulch State Park	100S	1, 122		x	x		x	x	x	x		x	x		x		
Paul M. Dimmick Memorial Grove State Park	103S	12		x	x		x	x		x		x	x		x		
Montgomery Woods State Park	104S	647		x	x		x	x		x					x		
Hendy Woods State Park	105S	587		x	x		x	x		x					x		
Indian Creek State Park	106S	15		x	x		x	x							x		
Woodson Bridge State Park	115S	70		x	x		x							x	x		
Plumas-Eureka State Park	127S	2, 290	S	x	x		x	x	x	x	x	x	x		x	x	
Tahoe State Park	131S	13	L	x	x	x	x	x		x	x	x	x				
D. L. Bliss State Park	133S	1, 237	L	x	x	x	x	x		x	x	x	x		x		
Emerald Bay State Park	134S	590	L	x	x	x	x			x	x	x	x		x		
Grover Hot Springs State Park	136S	440		x	x		x	x	x	x		x	x		x		
Calaveras Big Trees State Park	149S	5, 437		x		x	x	x		x		x	x		x	x	
Franks Tract State Park	171S	2, 755		x	x	x	x				x	x	x		x		
Bothe-Napa Valley State Park	182S	1, 002	S	x	x		x	x	x	x		x					
R. L. Stevenson Memorial State Park	186S	396		x	x		x								x		
Maillard Redwoods State Park	189S	242		x	x		x	x							x		
Armstrong Redwoods State Park	196S	440		x	x		x	x		x	x				x		
Sonoma Coast State Park	197S	697		x	x		x	x		x		x	x				
Tomales Bay State Park	199S	978		x	x	x	x	x	x	x	x	x	x		x		
Samuel P. Taylor State Park	201S	2, 332		x	x		x	x	x	x		x	x		x		
Mount Tamalpais State Park	202S	1, 366		x	x		x	x	x	x					x		
Portola State Park	218S	1, 665		x	x		x	x	x	x		x	x		x		
Butano State Park	219S	1, 955		x	x		x	x	x	x					x		
Big Basin Redwoods State Park	220S	11, 033		x	x		x	x	x	x		x	x		x		
Henry Cowell Redwoods State Park	224S	1, 737		x	x		x	x	x	x		x	x		x		
Henry W. Coe State Park	227S	12, 161		x	x		x	x	x	x			x		x		
Mount Diablo State Park	232S	2, 167		x			x	x	x	x		x	x		x		
Asilomar Beach State Park	287S	96		x	x		x						x				
Pfeiffer-Big Sur State Park	297S	815		x	x		x	x	x	x		x	x		x		
John Little State Park	298S	21		x				x				x	x				
Joshua Trees State Park	347S	1, 195		x	x		x	x	x	x					x		
Lake Elsinore State Park	402S	2, 954	L	x	x		x	x				x	x				
Anza Borrego Desert State Park	420S	469, 908		x		x	x	x	x	x					x		
Palomar Mountain State Park	414S	1, 726		x	x			x	x	x			x		x		
Cuyamaca Rancho State Park	433S	20, 735	L	x	x		x	x	x	x			x		x		

See footnotes at end of table.



	Number on map	Acreage: Total land and water within area	Acreage: Water surface (7)	Type of use: Day and weekend	Type of use: Vacation	Type of use: Out-of-State target	Type of use: Tourist en route	Activities: Picnicking	Activities: Hiking and riding	Activities: Camping	Activities: Boating	Activities: Swimming	Activities: Fishing	Activities: Hunting	Activities: Nature study	Activities: Winter sports	Activities: Wilderness experience
STATE—Continued																	
Recreation areas:																	
Punta Gorda	89S	23		x			x						x				
Lake Mendocino Public Fishing Area	107S	692	2, 000	x	x		x	x		x	x	x	x				
Clear Lake State Park	110S	560	25, 800	x	x			x	x	x		x	x				
Black Butte Reservoir	112S	6, 000	4, 600	x	x		x	x	x	x	x	x	x				
Colusa-Sacramento River State Park	119S	67		x			x	x			x	x	x				
Curry-Bidwell Bar State Park	122S	21		x				x				x	x				
Squaw Valley State Park	130S	1, 000		x	x		x	x	x				x			x	
Topaz Lake	137S	200	1, 000	x				x			x	x	x				
Finnon Reservoir	152S	121	35	x				x					x				
Folsom-Nimbus Lake State Park	166S	17, 264	10, 209	x				x				x	x				
Brannan Island State Park	170S	224		x	x			x		x	x	x	x				
Angel Island State Park	205S	221		x				x	x		x	x	x				
Caswell Memorial State Park	233S	258		x				x		x		x	x		x		
Modesto Reservoir	234S	150	3, 800	x				x			x	x	x				
George J. Hatfield State Park	235S	47		x				x				x	x				
McConnell State Park	236S	74		x				x				x	x				
Fremont Ford State Park	237S	114		x				x					x				
Turlock Lake State Park	242S	228	3, 200	x	x			x		x	x	x	x				
Tulloch Reservoir	245S	62	1, 265	x									x				
Success Reservoir	267S	1, 311	2, 450	x	x			x	x	x	x	x	x				
Terminus Reservoir	268S	57	1, 945	x	x			x	x	x	x	x	x				
Millerton Lake State Park	271S	6, 551	4, 900	x	x			x		x	x	x	x				
Madera Lake	272S	1, 100	370	x	x			x		x	x		x				
San Joaquin River	273S	224		x	x			x		x	x	x	x				
Fremont Peak State Park	279S	244		x	x			x		x							
Morro Strand Beach State Park	308S	32		x				x				x	x				
Morro Bay State Park	309S	1, 477		x	x	x	x	x		x	x	x	x				
Kern River State Park	320S	1, 327		x							x	x	x				
Isabella Reservoir	321S	15, 700	11, 300	x	x		x	x		x	x		x				
Puddingstone Reservoir State Park	342S	1, 199	200	x					x		x	x	x				
Placerita Canyon State Park	350S	342		x				x									
Salton Sea State Park	423S	16, 364	L	x	x	x	x	x	x	x	x	x					
Colorado River	429S	163		x	x	x	x	x		x		x	x				
Sweetwater Reservoir	434S	1, 500	1, 200	x	x			x	x	x	x		x	x			
Mission Bay State Park	436S	62		x							x	x	x				
Monuments:																	
Scientific: Mitchell Caverns State Park	334S	83		x			x	x		x							
Historic:																	
William B. Ide Abode State Historic Monument	63S	1		x			x										
Shasta State Historic Monument	67S	6		x			x										
Weaverville Joss House State Historic Monument	71S	3		x			x										

See footnotes at end of table.

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STATE—Continued																	
Monuments—Continued																	
Historic—Continued																	
Fort Humboldt State Historic Monument	84S	12		x			x										
Donner Memorial State Park	129S	353	S	x			x	x		x	x	x	x			x	
Columbia Historic State Park	147S	232		x			x	x				x					
Marshall Gold Discovery	153S	137					x	x		x		x	x				
Sutter's Fort State Historic Monument	159S	6		x			x										
Petaluma Adobe State Historic Monument	178S	5		x			x										
Sonoma State Historical Monuments	179S																
Sonoma Mission State Historic Monument		6		x			x										
Vallejo Home Historic Monument		25		x				x									
Jack London Home State Historic Monument	180S	40		x													
Fort Ross State Historic Monument	195S	3		x			x										
Los Coches Rancho	278S	8		x													
San Juan Bautista	280S	4															
Santa Cruz Mission State Historic Monument	282S	1		x			x										
Monterey State Historical Monuments	288S																
California's First Theatre Historic Monument				x			x										
Casa Del Oro Historic Monument				x			x										
Gutierrez Abode Historic Monument				x			x										
Junipero Serra Landing Place Historic Monument		1		x			x										
Old Custom House Historic Monument		2		x			x										
Pacific Building Historic Monument				x			x										
Monterey State Historical Monuments—Con.																	
Soberanes Abode Historic Monument				x			x										
Stevenson House Historic Monument				x			x										
Thomas Oliver Larkin State Historic Monument				x			x										
Hearst San Simeon State Historic Monument	303S	149		x			x										
Los Angeles State Historic Monuments	352S																
Los Encenios State Historic Monument		5		x			x										
Lummis Home State Historic Monument		2		x			x										
Pio Pico State Historic Monument		1		x			x										
Pueblo de Los Angeles State Historic Monument		5		x			x										

See footnotes at end of table.

		Acreage		Type of use				Activities									
	Number on map	Total land and water within area	Water surface (7)	Day and weekend	Vacation	Out-of-State target	Tourist en route	Picnicking	Hiking and riding	Camping	Boating	Swimming	Fishing	Hunting	Nature study	Winter sports	Wilderness experience
STATE—Continued																	
Parks—Continued																	
Will Rogers State Park	353S	187	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fort Tejon State Historic Monument	356S	205	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..
La Purisima Mission	360S	966	....	x	..	..	x	x	..	..	..	..	..	..	..	..	..
San Pasqual Battlefield	412S	1	....	x	..	..	x	..	..	..	..	..	..	..	..	..	..
Montgomery Memorial State Park	440S	29	....	x	..	..	x	..	..	..	..	..	..	..	..	..	..
Nature preserves:																	
Azalea Reserve State Park	85S	30	....	x	..	..	x	..	x	..	..	..	..	..	x	..	..
Kruse Rhododendron Reserve State Park	193S	317	....	x	..	..	x	..	x	..	..	..	..	..	x	..	..
Knowland Arboretum State Park	230S	470	....	x	..	..	x	..	x	..	..	..	..	..	x	..	..
Point Lobos Reserve State Park	291S	356	....	x	..	..	x	..	..	..	..	x	x	..	x	..	..
Los Angeles Arboretum State Park	351S	238	....	x	..	..	x	..	x	..	..	..	..	..	x	..	..
Torrey Pines Beach State Park	435S	877	....	x	..	..	x	..	..	..	..	x	x	..	x	..	..
Wilderness: Mount San Jacinto State Park	417S	12, 708	....	..	x	x	..	..	..	x	..	x	..	..	..	..	..
Beaches:																	
Little River Beach State Park	16S	112	....	x	..	x	x	x	..	..	..	x	x	..	..	..	..
Westport-Union Landing Beach State Park	92S	32	....	x	..	x	x	..	..	..	..	..	x	..	..	..	..
MacKerricher Beach State Park	95S	264	....	x	..	x	x	x	..	x	..	..	x	x	x	..	..
Van Damme Beach State Park	101S	1, 826	....	x	x	x	x	x	x	x	..	x	x	..	..	..	..
Benicia Beach State Park	176S	128	....	x	..	x	x	x	..	..	..	x	x	..	..	..	..
Manchester Beach State Park	190S	261	....	x	..	x	x	x	..	x	..	..	x	..	x	..	..
Stinson Beach State Park	204S	38	....	x	..	x	x	x	..	..	x	x	x	..	..	..	..
San Francisco Beaches	207S																
Bakers Beach State Park	....	1	....	x	..	x	x	x	..	..	..	..	x	..	..	..	..
James D. Phelan Beach State Park	....	6	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Seal Rocks Beach State Park	....	17	....	x	..	x	x	..	..	..	..	..	x	..	..	..	..
Montara Beach State Park	210S	13	....	x	..	x	x	..	..	..	..	..	x	..	..	..	..
San Mateo Beaches	213S																
Arroyo de las Frijoles	....	34	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Half Moon Bay Beach	....	63	....	x	..	x	x	..	..	..	..	..	x	..	..	..	..
McGrath Beach	....	245	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Pebble Beach State Park	....	2	....	x	..	x	x	..	..	..	..	..	x	..	..	..	..
Pescadero Beach State Park	....	27	....	x	..	x	x	..	..	..	..	..	x	..	..	..	..
Pomponio Beach	....	40	....	x	..	x	x	x	..	..	..	x	x	..	..	..	..
San Gregorio Beach State Park	....	47	....	x	..	x	x	..	..	..	..	..	x	..	..	..	..
Sharp Park Beach State Park	....	7	....	x	..	x	x	..	..	..	..	..	..	..	..	..	..
Thornton Beach State Park	....	50	....	x	..	x	x	..	..	..	..	..	x	..	..	..	..
Ana Nuevo Beach State Park	223S	91	....	x	..	x	x	..	..	..	x	x	x	..	..	..	..
Santa Cruz Beaches	283S																
Capitola Beach State Park	....	6	....	x	..	x	x	x	..	..	..	x	x	..	..	..	..
Manresa Beach State Park	....	21	....	x	..	x	x	x	..	..	..	x	x	..	..	..	..
Natural Bridges Beach State Park	....	47	....	x	..	x	x	x	..	..	..	x	x	..	..	..	..
New Brighton Beach State Park	....	63	....	x	x	x	x	x	..	x	..	x	x	..	..	..	..

See footnotes at end of table.

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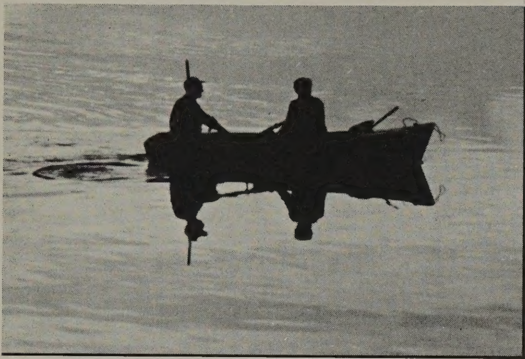
STATE—Continued																	
Beaches—Continued																	
Seacliff Beach State Park	....	82	....	x	x	x	x	x	..	x	..	x	x	..	..	..	..
Sunset Beach State Park	....	178	....	x	x	x	x	x	..	x	..	..	x	..	..	..	..
Twin Lakes Beach State Park	....	110	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Zmudowski Beach State Park	....	144	....	x	..	x	x	x	..	..	..	x	x	..	..	..	..
Salinas River Beach	284S	90	....	x	..	x	x	x	..	..	..	x	x	..	x	..	..
Monterey Beach State Park	286S	8	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Carmel River Beach State Park	290S	106	....	x	..	x	x	x	..	..	..	x	x	..	..	..	..
San Simeon Beach State Park	304S	74	....	x	..	x	x	x	..	..	..	x	x	..	..	..	..
Cayucos Beach State Park	307S	16	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Avila Beach State Park	311S	10	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Pismo Beach State Park	312S	643	....	x	x	x	x	..	..	x	..	x	x	..	..	..	..
Point Sal Beach State Park	359S	49	....	x	x	x	x	..	..	x	..	x	x	..	..	..	..
Gaviota Beach State Park	362S	9	....	x	x	x	x	x	..	x	x	x	x	..	..	..	..
Refugio Beach State Park	363S	36	....	x	x	x	x	x	..	x	..	x	x	..	..	..	..
El Capitan Beach State Park	366S	111	....	x	x	x	x	x	..	x	..	x	x	..	..	..	..
Goleta Beach State Park	367S	23	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Arroyo Burro Beach State Park	369S	6	....	x	..	x	x	x	..	..	x	x	x	..	..	..	..
Carpinteria Beach State Park	370S	36	....	x	x	x	x	x	..	x	x	x	x	..	..	..	..
Emma K. Wood Memorial Beach State Park	372S	16	....	x	x	x	x	x	..	x	..	x	x	..	..	..	..
San Buenaventura Beach State Park	373S	116	....	x	..	x	x	..	..	..	x	x	x	..	..	..	..
Los Angeles County Beaches																	
Leo Carrillo Beach State Park	379S	1, 578	....	x	x	x	x	x	..	x	..	x	x	..	..	..	..
Point Dumes Beach State Park	381S	17	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Las Tunas Beach State Park	382S	2	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Malibu Lagoon Beach State Park	382S	38	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Will Rogers Beach State Park	383S	66	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Dockweiler Beach State Park	384S	91	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Manhattan Beach State Park	384S	44	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Redondo Beach State Park	384S	26	....	x	..	x	x	x	..	..	..	x	x	..	..	..	..
Santa Monica Beach State Park	384S	38	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Royal Palms Beach	385S	18	....	x	..	x	x	..	..	..	..	..	..	..	..	..	..
Alamitos Beach State Park	386S	91	....	x	..	x	x	..	..	..	x	x	x	..	..	..	..
Bolsa Chica Beach State Park	388S	450	....	x	..	x	x	x	..	..	..	x	x	..	..	..	.
Huntington Beach State Park	390S	78	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Corona del Mar Beach	391S	30	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Doheny Beach State Park	396S	62	....	x	..	x	x	x	..	x	..	x	x	..	..	..	..
San Clemente Beach State Park	398S	109	....	x	x	x	x	x	x	x	..	x	x	..	..	..	.
San Diego Beaches	409S																
Cardiff Beach State Park	....	10	....	x	..	x	x	x	..	..	..	x	x	..	..	..	..
Carlsbad Beach State Park	....	10	....	x	..	x	x	x	..	..	..	x	x	..	..	..	..
La Costa Beach State Park	....	14	....	x	x	x	x	..	..	x	..	x	x	..	..	..	..
Moonlight Beach State Park	....	11	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Ponta Beach State Park	....	11	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..

See footnotes at end of table.



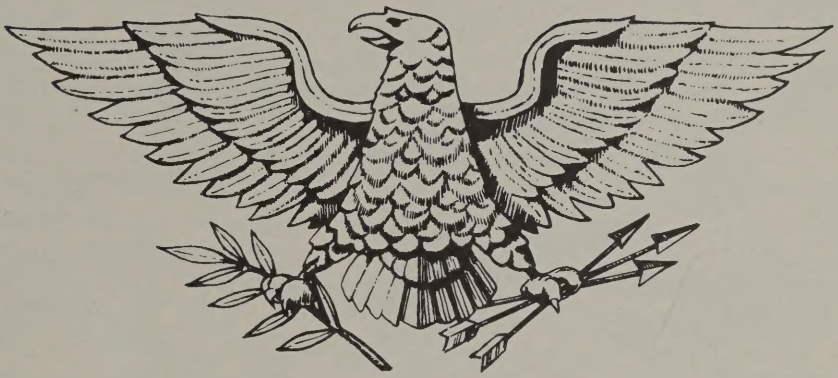
	Number on map	Acreage		Type of use				Activities									
		Total land and water within area	Water surface (*1*)	Day and weekend	Vacation	Out-of-State target	Tourist en route	Picnicking	Hiking and riding	Camping	Boating	Swimming	Fishing	Hunting	Nature study	Winter sports	Wilderness experience
STATE—Continued																	
Beaches—Continued																	
San Elijo Beach State Park	....	37	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Ocean Beach State Park	437S	3	....	x	..	x	x	..	..	..	..	x	x	..	..	..	..
Silver Strand Beach State Park	439S	428	....	x	..	x	x	x	..	..	x	x	x	..	..	..	..
Forest: Jackson State Forest	96S	52, 042	....	..	x	x	..	x	x	x	..	..	x	x	..	..	..
Foot trail: California Hiking and Riding Trail	23S	750 mi.	....	x	x	..	..	x	x	x	..	..	..	..	x	..	x
MAJOR LOCAL																	
Parks:																	
San Meteo County Memorial Park	212L	313	2	x	..	..	..	x	x	x	..	..	x	x	..	..	..
Santa Teresa Park	225L	350	....	x	..	..	..	x	x	..	..	..	..	..	..	..	..
Tehachapi Mountain Park	322L	700	....	x	x	..	x	x	x	x	..	..	..	..	..	..	..
Irvine Park	392L	186	650	x	x	..	x	x	x	..	x	..	..	..	..	..	..
Recreation areas:																	
Lower Klamath Lake	34L	3, 674	....	..	..	..	..	..	..	..	..	..	..	x	x	..	..
Keswick Reservoir	69L	1, 000	630	x	..	..	..	x	..	..	..	..	x	..	..	..	..
Mendocino Lake Coyote	108L	2, 392	960	x	x	..	x	x	x	x	x	x	x	..	..	..	..
Stony Gorge	113L	1, 280	1, 275	x	..	..	..	x	..	x	x	x	x	..	..	..	..
East Park Reservoir	114L	600	1, 820	x	x	..	..	x	..	x	x	x	x	..	..	..	..
Englebright Reservoir	124L	5	815	x	..	..	..	x	x	..	x	x	x	x	..	..	..
Bridgeport Reservoir	141L	40	3, 000	x	..	..	..	..	..	x	x	x	..	..	..	..	..
Pardee Reservoir	155L	300	2, 200	x	..	..	..	..	..	..	x	..	x	..	..	..	..
Elk Grove Park	157L	38	....	x	..	..	..	x	..	..	..	x	..	..	..	..	..
North Fork Reservoir	168L	1, 410	280	x	..	..	..	x	..	..	x	x	x	..	..	..	..
Berryessa Lake	184L	2, 000	19, 300	x	x	..	..	x	..	x	x	x	x	..	..	..	..
Junipero Serra County Park	209L	96	....	x	x	..	x	x	x	..	..	..	..	..	..	..	..
Palo Alto Foothills Park	214L	500	....	x	x	..	x	x	x	..	..	..	..	..	..	..	..
Stevens Creek County Park	215L	400	95	x	..	..	x	x	x	..	x	x	..	..	..	..	..
Sunnyvale Mountain Park	216L	250	....	x	..	..	..	x	x	..	..	..	..	..	..	..	..
Anderson Reservoir	226L	40	1, 600	..	..	..	..	..	x	..	x	x	x	..	..	..	..
Redwood Regional Park	231L	2, 074	....	x	..	..	x	x	x	..	..	..	..	..	..	..	..
Don Pedro Reservoir	244L	4, 200	3, 200	x	..	..	..	..	..	..	x	..	x	..	..	..	..
Cutler Park	269L	60	....	x	..	..	x	x	x	..	..	x	..	..	..	..	..
Santa Margarita Lake	314L	1, 068	720	x	x	..	x	x	x	x	x	..	x	..	..	..	..
Sepulveda Reservoir	354L	2, 875	2, 140	x	x	..	..	x	..	x	x	..	x	..	..	..	..
Cachuma Lake	364L	300	3, 250	x	x	..	..	x	..	x	..	..	x	..	..	..	..
Casitas Lake	371L	1, 800	5, 700	x	x	..	..	x	..	x	x	..	x	..	..	..	..
Whittier Narrows Reservoir	387L	1, 161	66	x	..	..	x	x	x	..	..	..	x	..	..	..	..
O'Neil Park	395L	268	....	x	..	..	x	x	x	..	..	..	..	..	..	..	..
Hodges Lake	411L	1, 627	1, 317	x	x	..	x	x	x	x	x	x	x	..	..	..	..
Beach: Cambria County Beach	306L	2	....	x	x	x	x	..	..	..	..	..	x	..	..	..	..
MAJOR QUASI-PUBLIC AND PRIVATE																	
Recreation areas:																	
Shelter Cove	191P	60	....	x	..	..	..	x	..	..	x	..	x	..	..	..	..
17 Mile Drive	289P	17 mi.	....	x	x	x	x	x	..	..	..	x	..	..	x	..	..

footnotes .... (*1*) Where acreage not shown
"S" indicates water surface under 500 acres.
"M" indicates water surface of 500 to 10,000 acres.
"L" indicates water surface over 10,000 acres.

(*2*) *Recreation areas on lands administered by the Department of the Interior's Bureau of Land Management.*

Tahoe National Forest encompasses an ever changing panorama of Sierra splendor.

Programs of Federal Natural Resource Agencies



The natural resource functions of the Federal agencies represented in this booklet are extensive and detailed and are only briefly described. Additional information can be obtained by contacting the offices noted in the following programs section.

Three projects built by the Corps on the San Lorenzo River are bank levees, breakwaters, and a pleasure boat marina

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers has been engaged in projects in California for over a century. The earliest Corps project in California dates back to 1852 when Congress appropriated funds for the improvement of San Diego Harbor. Since that time, the program of the Corps has been expanded by congressional action until now it is concerned with all aspects of water resources development.

The work of the Corps includes improving and constructing harbors, dredging navigable streams and maintaining navigable channels, planning and constructing flood-control and multipurpose projects, administering the laws pertaining to protection and preservation of navigable waters, providing works for shore protection and prevention of beach erosion, and making investigations and engineering reports on all major streams in the State.

Navigation and Flood Control

The navigation program of the Corps of Engineers in California includes improvement and maintenance of all major coastal harbors in the State, development of deep-draft and shallow-draft inland waterways for commercial fishing, recreational boating and barge traffic; deepening and widening inland waterways to meet increasing transportation needs, and maintenance of navigable streams. The control of hydraulic mining debris in the Sacramento-San Joaquin Basin is also a part of the navigation program.

Flood-control reservoirs, or levee and channel-improvement works, prevent damage to cities, farms, and industry. Upon completion, levee and channel-improvement projects are usually transferred to local authorities for operation and maintenance. Flood-control reservoirs are usually operated and maintained by the Corps of Engineers unless the protection provided is essentially local in nature.

Debris-control works prevent hydraulic mining debris from entering the main stream channels and impairing their usefulness for navigation and flood-carrying purposes. Such works retain the debris in the foothill regions and permit hydraulic mining.

Total accumulated flood damages prevented to date by Corps flood control projects is estimated at $1.25 billion. During the Christmas floods of 1964, for example, about $400 million in damages were prevented by works on the Sacramento River—facilities originally costing $169 million. In four consecutive floods, this project has more than paid for itself each time.

However, many streams still remain uncontrolled or only partially controlled, and many areas are entirely unprotected or inadequately protected by existing flood-control projects. Comprehensive planning and construction programs must be continued in order to check periodic floods, which not only cause destruction and damage, but also waste to the ocean vast amounts of water that should be conserved for the benefit of the people, agriculture, and industry of California.

Other Projects

In addition to the construction of flood-control projects, the Corps of Engineers formulates operating rules and regulations for storage space allocated to flood control or navigation at all reservoirs constructed wholly or in part with Federal funds. The Corps of Engineers—in cooperation with the Bureau of Reclamation, the U.S. Weather Bureau, and the California Department of Water Resources—has developed such regulations for the operation of 1,300,000 acre-feet of flood-control space in Shasta Reservoir, 390,000 acre-feet of flood-control space in Friant Reservoir, and 750,000 acre-feet in Oroville Reservoir.

Detailed investigation of potential water resources development projects is an essential part of dam authorization for construction. Congress has directed that the Corps of Engineers make investigations and prepare reports on numerous proposed improvements in California.

Emergency work consists principally of flood-fighting activities, repair of structures damaged by floods, and clearing and snagging operations. During the past 10 years, the average annual cost of this work in California has been $2,400,000. The Corps of Engineers also repairs and restores flood-damaged facilities at the request of the Office of Emergency Planning.

To protect public property and to promote and encourage healthful public recreation, the Corps of Engineers and the State of California are conducting cooperative studies of beach erosion and shore protection problems along the California shoreline.

The Corps also undertakes small projects and emergency work under various general congressional authorization, with funds appropriated annually for such purposes. The total allotment for small navigation projects may not exceed $2 million for any 1 year, and not more than $200,000 may be alloted for the construction of a project at any single locality. Each small navigation or flood-control project must be complete in itself, and not commit the Federal Government to any additional improvement to insure its successful operation.

Further information regarding activities of the Corps of Engineers in California can be obtained by writing to Division Engineer, South Pacific Division, U.S. Army Corps of Engineers, 630 Sansome Street, San Francisco, Calif., 94111.

A levee near Rohnerville prevents floodwaters from destroying valuable delta farm land and injuring livestock.

U.S. Forest Service

The Forest Service of the Department of Agriculture works in three major fields that affect the forest resources of California: administration of National Forests, cooperation with the State forester in programs for management and protection of State and private forest lands, and research in forestry, range management, and related fields.

National Forest Administration

National Forests in California cover a gross area of 24,108,265 acres of which 19,924,030 acres are federally owned. This vast land area is divided into 17 National Forests within California and three additional forests which extend into California from adjoining States.

These National Forest lands have many uses; providing water, recreation, timber, forage, wildlife and fish. The Forest Service manages these lands to obtain the best combination of uses which will benefit the Nation as a whole, now and in the future.

The Regional Forester in San Francisco administers the national forests in California through the respective forest supervisors and their staffs.

National Forests in California include parts of each major watershed area in the State. Two-thirds of the 5 million acres under irrigation in California are dependent on National Forest watersheds; 10 million Californians receive all or part of their domestic water from these same areas. Eighty percent of the electric energy used in the State is developed from water originating on National Forest watersheds at high elevations descending to the valleys.

Forest Resources

From California's National Forests alone, over 1 billion board feet of timber are harvested in a typical year. The National Forests provide grazing for over 100,000 head of cattle and 85,000 sheep. During the year, there are over 800,000 hunter visits to these forests, and a harvest of 43,000 big-game animals. California's forests contain 12,173 miles of fishing streams and 130,703 acres of lakes which receive over 1 million visitors each year. Winter sports, camping, and all forms of outdoor recreation draw a total of more than 16 million visitors to California National Forests annually.

With use of the National Forests increasing yearly, it has become necessary for the Forest Service to intensify management and protection activities to avoid serious deterioration of existing resources and facilities through overuse. The Forest Service has embarked on a "Development Program for the National Forests" aimed at developing and managing all resources for the anticipated demands by 1972 and including long-term planning for the year 2000.

In terms of on-the-ground work the development program will mean construction of 6,350 campgrounds and picnic sites and related facilities, planting 952,000 acres with trees, pruning and thinning trees on 872,000 acres, improvements and developments on 82,000 acres of wildlife range, erosion control work on 27,000 acres, construction of 13,827 miles of multiple-purpose roads and 1,137 miles of trails, and many other improvements.

State and Private Cooperation

The Regional Forester and the State Forester cooperate in a number of programs to promote better management and protection of State and private forest land. These programs include forest and range fire prevention and control, forest pest control, tree planting, forest management, flood prevention, watershed protection, and rural area development.

The State department of conservation administers these programs, while the Forest Service provides financial and technical assistance. Cooperative conservation programs are also carried out through local soil conservation districts and agricultural stabilization and conservation committees.

Forest and Range Research

Forest and range research is one of the important functions of Forest Service work. The headquarters for research work in Califronia is the State Forest and Range Experiment Station at the University of California at Berkeley. This station is augmented by 14 field stations throughout the State.

At one of these stations, the Forest Genetics Laboratory at Placerville, experiments in tree breeding for faster growing and more disease-resistant trees are carried on extensively. Other research programs carry on a constant fight against forest insects and diseases, seek improved methods of firefighting, and study wildlife habitat, forest regeneration, and timber management. Study of soils, improvement of grazing lands, improvement and management of watersheds, and other similar work, make up a complex research program at the various field stations. The Forest Service research organization is also responsible for periodic surveys of the State's timber resources.

Additional information on activities of the Forest Service in California may be obtained from the Regional Forester, U.S. Forest Service, 630 Sansome Street, San Francisco, Calif., 94111.

Fish and Wildlife Service

Research is the dominant theme of the Department of the Interior's Fish and Wildlife Service activities in California. From ocean depths to high Sierra lakes, research protects and increases fish and wildlife resources which the Nation's fastest-growing State has in unique abundance. This research pays off in greater catches for commercial fishermen and in more frequent satisfaction for hunters and sport fishermen.

The Fish and Wildlife Service is composed of the Bureau of Commercial Fisheries and the Bureau of Sport Fisheries and Wildlife.

Research Activities

The Bureau of Commercial Fisheries carries out intensive studies of the Pacific sardine, the northern anchovy, jack and Pacific mackerel, hake, and other species at the La Jolla Biological Laboratory. At the San Diego Biological Laboratory, Bureau scientists are conducting biological and oceanographic research on tuna. To assure the quality of freshly caught tuna, the Bureau also studies shipboard handling and refrigeration of the fish, and thawing, handling, and processing ashore. The Stanford Biological Laboratory studies weather and oceanography of the northern Pacific so that changes in environment can be related to the abundance and distribution of fish. Many of these research programs are carried out cooperatively with State agencies and universities.

Besides research, the Bureau provides day-to-day services; market information, foreign fishery reports, loan funds for boat maintenance and repair, educational programs to increase domestic consumption of fishery products, and a program to certify the quality of fishery products.

Research extends to sport, as well as commercial, fishing. The Bureau of Sport Fisheries and Wildlife operates the Tiburon Marine Laboratory where surveys have been completed of the kinds and quantities of salt-water fish taken by anglers and of the number and kinds of fishing facilities available to these anglers. Studies continue on the biology of important game fish. In cooperation with anglers, Bureau researchers tag marlin and sailfish and conduct surveys to learn the effect of temperatures on surface-schooling fish. Near Inyo National Forest, scientists study stocking practices, hatchery rearing, the survival of various species of trout, and methods of habitat improvement.

Antelope kids are tagged on Sheldon National Refuge before they are set free to wander undisturbed.

Federal funds are available for research and management programs on a matching basis. The State provides for 25 percent of the project cost and the Federal Government 75 percent. In recent years funds from Federal Aid in Fish Restoration have provided more than $300,000 a year for research and management of sport fisheries. These funds finance studies of salmon and steelhead trout in the Sacramento River and along the north coast, of striped bass in the Sacramento-San Joaquin delta area, and of reactions of warm-water fish to experimental management techniques in reservoirs. These projects seek to increase fish production.

Federal Aid in Wildlife Restoration funds apportioned to California have amounted to about $775,000 a year during the past several years. Much of this is used to maintain and operate waterfowl management areas, Gray Lodge, Grizzly Island, Honey Lake, Imperial, Los Banos, and Mendota, and the Doyle and Tehama Deer Winter Ranges.

Some of these funds may be used for the development of fish and wildlife habitat on 800,000 acres of public domain.

Federal Aid in Wildlife Restoration funds also finance studies of population trends and seasonal kills of upland game, big game, and waterfowl so that better hunting regulations can be put into effect.

River Basin Studies

Several river basin studies are being carried out to preserve existing fish and wildlife resources, to improve stream flows to increase fish resources, and in some cases to provide water for proposed new waterfowl and wildlife management areas. Proposed water and power development projects are studied to determine the effects they would have on fish and wildlife. Recommendations to provide for fish and wildlife conservation are made in time to be included in construction plans.

An example is the Shasta Dam project built by the Bureau of Reclamation. The project includes the Coleman National Fish Hatchery, operated by the Fish and Wildlife Service to maintain salmon runs in the upper Sacramento River. Up to 40 million eggs are taken annually from fall chinook salmon, and another 2 million eggs are taken each year from steelhead trout. The Fish and Wildlife Service and the Bureau of Reclamation are also jointly exploring the possibility of creating ideal salmon spawning conditions on a 10-mile stretch of the proposed Tehama-Colusa Canal project.

Wildlife Refuges

In California, the Fish and Wildlife Service operates 14 National Wildlife Refuges with a total of more than 200,000 acres. The Klamath Basin group of refuges in northern California includes Tule Lake, Clear Lake, and Lower Klamath. They have a combined area of more than 92,000 acres. A large percentage of the ducks and geese in the Pacific Flyway funnel through this area of refuges during migration. Other National Wildlife Refuges include Colusa (4,000 acres), Delevan (5,300 acres), Havasu Lake (17,800 acres), Imperial (14,700 acres), Kern (10,500 acres), Merced (2,600 acres), Modoc (6,000 acres), Pixley (4,300 acres), Sacramento (10,800 acres), Salton Sea (36,500 acres), and Sutter (2,600 acres).

Further information on programs of the Fish and Wildlife Service in California may be obtained from the Area Director, Bureau of Commercial Fisheries, 101 Seaside Avenue, Terminal Island, Calif., or from the Regional Director, Bureau of Sport Fisheries and Wildlife, 1002 NE. Holladay Street, P.O. Box 377, Portland, Oreg., 97232.

Geological Survey

Scientists of the Department of the Interior's Geological Survey are engaged in a variety of geologic and geophysical studies in California aimed at increasing knowledge of many different mineral and mineral fuel resources and providing data to aid in solving urban development problems. Some of these studies contribute to understanding the geologic composition, structure, and history of the State.

Several studies in California are related to areas known or suspected to contain useful minerals or mineral fuels such as the nickel-bearing rocks of the Klamath Mountains, the eastern Sierra Nevada tungsten belt, quicksilver deposits of the Coast Ranges, and borate deposits of Searles Lake and Death Valley.

Engineering geologic investigations in the rapidly growing Los Angeles and San Francisco-Oakland areas are providing essential information on landslides, faults, and other geologic features that must be taken into account in planning urban construction.

Other geologic and geophysical studies unravel a variety of local and regional geologic problems and are supported by aeromagnetic and gravity surveys which provide additional information about the character and structure of rocks at depth. Regional analyses of fossils and their interrelationships help to clarify the history of geologic events interpreted in other studies.

Several of the Survey's projects in California are carried out in cooperation with the California Division of Mines and Geology. Information on other geologic work in progress in the State may be obtained from that agency at the Ferry Building, San Francisco, Calif., 94111.

Topographic Mapping

The Geological Survey began its topographic surveys and the publication of quadrangle maps in California as early as 1882. These early surveys served their purpose well. To fulfill today's needs, the more detailed maps compiled by photogrammetric methods at a finer scale are required. Increased programs to complete the mapping of the State at this scale are being carried out. To expedite this mapping the State department of water resources contributes to cooperative programs.

At the present time, approximately 96 percent of the State is covered by published topographic maps at 1:24,000 or 1:62,500 scale. The remaining 4 percent of the State is included in the mapping and revision work now in progress. Photogrammetrically compiled 1:250,000 scale topographic maps are available for the entire State.

Water Resources Investigations

The Geological Survey's water investigations describe the distribution, supply and quality of the water resources of California on the surface and underground, whether under natural conditions or under conditions of present or potential development. Investigations are planned specifically to obtain water information needed to solve water problems relating to distribution, supply, quality, floods, and variability.

Basic data on streamflow are continuously collected by the Geological Survey at about 800 sites in California. About 200 water sampling stations monitor the chemical and physical quality of the State's waters. Ground-water levels are observed at about 160 sites. Additional streamflow, quality-of-water, and ground-water stations are maintained by the California Department of Water Resources and other agencies.

Appraisals of ground-water situation are currently underway in about 10 areas of the State. Other area and interpretive studies in progress include the following: land subsidence in the San Joaquin and Santa Clara Valley, sediments transported by streams, natural water loss in southern California, flood inundation maps, and seepage rates. Much of the program of water-resources investigations in California is carried out in cooperation with State, local, and other Federal agencies.

Lease Supervision

The Geological Survey supervises several thousand oil and gas leases in California covering about 1,600,000 acres. The annual production from the leases under supervision is about 57,500 barrels of oil daily, 21 billion cubic feet of gas, and 74 million gallons of natural gasoline and liquified petroleum gas, on which the royalties amount to more than $7 million.

Mining leases and permits on public, acquired, and Indian lands, covering more than 100,000 acres are also supervised by the Geological Survey.

Mineral Classification Activities

The Branch of Mineral Classification of the Geological Survey maintains two offices in California: one in Los Angeles, and one at Taft. These offices conduct geologic investigations prerequisite to the classification of public land and provide geologic advice to the engineers who supervise mineral production from Federal leases.

In addition, projects either underway or nearing completion include detailed geologic mapping of areas withdrawn pending classification for coal, preliminary structure contour map of the Vedder Sand, mineral map of the northern half of California, and contour map of the basement rocks of California.

Information on the various geologic and topographic maps, mineral resources maps, water resources reports, and other geological survey publications relating to California can be obtained by writing the Director, Geological Survey, Department of the Interior, Washington D.C., 20240.

Topographic mapping is an important responsibility of the Geological Survey.

Bureau of Indian Affairs

The Bureau of Indian Affairs of the Department of the Interior carries on two distinct types of activities in California. One is to assist Indians who live on the reservations in the conservation and development of their lands and other resources. The other program is centered in the four urban communities of Los Angeles, San Francisco, Oakland, and San José to help Indians from various parts of the country in settling in these communities or in receiving vocational training.

The "reservation" part of the Bureau's program in California is administered chiefly through an area office at Sacramento and two field offices—one at Hoopa in the north and the other at Riverside in the south.

Because the State has assumed full responsibility for providing its Indian citizens with education and welfare services and has both criminal and civil jurisdiction on Indian lands of the State, the Bureau's programs in California are much less comprehensive than in other Western States. The Bureau operates one school in California—the Sherman Institute at Riverside—where a special program is provided for children from the Navajo and other southwestern tribes who are 12 years old or over, and have had little or no previous opportunity for education.

On the reservations in the State, the Bureau assists Indian people in the management of their timber and grazing lands, in construction and maintenance of their irrigation systems, in securing credit for the financing of their enterprises, and in soil and moisture conservation. On behalf of Indian owners, the Bureau also constructs and maintains roads, sells timber, leases land for agricultural or other uses, collects and distributes rental income, plays a role in probating Indian estates, supervises the preparation of tribal membership rolls, provides technical assistance on tribal government, and performs other related services.

In the four urban centers, the Bureau maintains field employment assistance offices with staff members who specialize in helping Indians from reservations throughout the country to locate stable employment, find suitable housing, and enroll in vocational schools. Assistance is furnished not only to Indian workers or vocational trainees but also to their dependents and covers many phases of adjustment to urban life.

For additional information on programs of the Bureau of Indian Affairs in California, write to the Area Director, Bureau of Indian Affairs, 2550 Fair Oaks Boulevard, Sacramento, Calif., 95825.

Bureau of Mines

Mineral research, mineral-resource evaluation, and the promotion of health and safety in mineral industries are major activities of the Department of the Interior's Bureau of Mines in California. The Bureau's work is carried on in close cooperation with State agencies and private industry from five installations within the State. Many of the programs conducted by the Bureau in California benefit other parts of the Nation, just as Bureau projects conducted elsewhere often benefit California.

Petroleum Research

Research yields the advanced technology that makes possible wise and effective use of mineral resources; and, in California, the Bureau devotes substantial research efforts to the State's most

The Bureau of Mines works jointly with State agencies on projects such as exploratory drilling for clay deposits.

valuable mineral resource, petroleum. In the San Francisco Petroleum Research Laboratory, scientists and engineers work to improve secondary recovery methods which are used to force oil out of porous reservoir rocks and into producing wells, after natural underground pressures that once did the job have been dissipated.

Today, after years of production have depleted these natural pressures in many oilfields, secondary recovery has become increasingly important to oilmen in California. By experimenting with new secondary-recovery techniques, by improving the efficiency of known methods, and by applying advanced mathematical and statistical analysis to obtain accurate recovery predictions, Bureau technologists are furthering petroleum conservation. Many of their projects are carried out in cooperation with California's oil industry.

Mineral Research

A small, but world-famous Bureau research installation in California is the Berkeley Thermodynamics Laboratory on the campus of the University of California. At Berkeley, basic research is performed on the heat capacity of minerals, the amount of heat required to start and sustain chemical reactions, and related subjects.

Although the precise measurements obtained in this laboratory are used and valued as standards throughout the world, many projects conducted there are aimed specifically at encouraging development of California's mineral resources.

Thermodynamic knowledge is especially vital in devising chemical methods for recovering and treating minerals on a commercial basis, and the Berkeley Laboratory is constantly amassing such knowledge concerning California minerals. Working closely with metallurgists at other Bureau installations outside the State, scientists at Berkeley are providing basic information needed to devise advanced electrochemical techniques for commercial treatment of California clays and metallic ores.

Mineral Resource Studies

Evaluation of the Nation's mineral resources in the light of economic and technological developments is a continuing function of the Bureau of Mines. In mineral-rich California, this work is conducted from a Mineral Resource Office in San Francisco where several different types of projects are carried out.

Statistics on mineral production and consumption in the Golden State are regularly compiled and published; mineral production and processing operations are studied to obtain information on methods and costs that can be used to help promote industrial efficiency; California mineral deposits are examined to provide both industry and Government with a "running inventory" of the State's mineral resources.

A subdivision of the San Francisco Office is the newly established Marine Mineral Technology Center at Tiburon, which is part of the Department of the Interior's oceanographic installation on the San Francisco Bay. From the docks at Tiburon, specially-equipped ships carry Bureau engineers into the Pacific to conduct development work in an entirely new field—undersea mining. Deposits of valuable minerals are known to exist on the ocean floor, and the Bureau is trying to develop practical, economic methods for recovering this wealth. Major phases of this development program are being performed under cooperative agreement with private industry.

Health and Safety

The promotion of safe and healthful working conditions in the mineral industries is one of the Bureau's most vital missions. In California, as in other States, this objective is traditionally sought in several ways—by coal mine inspections, by giving first aid and safety training to minerals industry workers, and by presenting demonstrations and lectures on safety.

A Health and Safety Subdistrict Office in Oakland is the headquarters for these Bureau activities in the State.

Informational Films

In line with its responsibility for disseminating knowledge about the Nation's mineral resources, the Bureau of Mines conducts an informational-film program in cooperation with private industry. One of the most popular films in the Bureau's motion-picture library is *California and Its Natural Resources*, a 16-mm, sound and color documentary depicting the State's wealth in minerals, water, and other resources, and showing the diversity of industrial, agricultural, and recreational facilities based on them.

Prints are available on free short-term loan from the Bureau's film distribution center, 4800 Forbes Avenue, Pittsburgh, Pa., 15213, and from cooperating distribution centers in many States.

Additional information on Bureau of Mines activities in California may be obtained by writing to the Area Director, Area VI Mineral Resource Office, 420 Custom House, 555 Battery Street, San Francisco, Calif., 94111.

National Park Service

The National Park Service administers 14 units of the National Park System in California described earlier in this booklet.

Under a long-range program to develop areas in the National Park System, the Service is advancing plans for improvement of California park areas and acquisition of land for Point Reyes. Contracts are also being awarded for the construction of access roads and water and sewer systems in Yosemite National Park.

Other programs in California include the rehabilitation of residences at Death Valley, campground development and visitor center at Lassen Volcanic, building employee residences at Muir Wood, a visitor center and multiple use building at Sequoia and Kings Canyon, and campground and campfire circle development and reconstruction of Nature Center building at Yosemite.

The Service conducts a roads and' trails program to improve parking areas, hiking and nature trails, bridges, and access roads at several areas.

However, the real accomplishments of the long-range development program of the National Park Service are measured, not by miles of new roads, more campgrounds, or by the number of new visitor centers, but by how well the program as a whole accomplishes the purpose of National Parks and Monuments.

Over the years, the Congress has included within the growing National Park System, three distinct types of areas: natural, historical, and recreational. Because each of these three types of areas requires a separate management concept, the National Park Service is updating its management policies to be more responsive to the unique requirements of the widely varying types of areas within the system.

Preserving the scenic and scientific grandeur of our Nation—presenting its history—providing healthful outdoor recreation for the enjoyment of our people—bringing into focus relationships within the total environment: these are the themes which bind together the management principles and objectives of the National Park Service.

Additional information on activities of the National Park Service in California may be obtained from the Director, Western Region Office, National Park Service, 180 New Montgomery Street, San Francisco, Calif., 94105.

An unexpected sight at Death Valley is Scotty's Castle open all year for overnight guests.

Bureau of Reclamation

For more than 60 years, the Bureau of Reclamation has played a vital role in the economy of California through construction of multiple-purpose water resource development projects. They bring to the State benefits of irrigation water supply, flood control, hydroelectric generation and transmission, municipal and industrial water supply, water oriented recreation, fish and wildlife enhancement, and consequent overall development of fertile farmlands and progressive, prosperous communities.

Since the Bureau of Reclamation was established in 1902, more than $1 billion has been appropriated by Congress to build projects in California. About 90 percent of this investment will be repaid to the Federal Treasury by the water and power users, much of it with interest. In addition, financial returns in terms of agricultural, industrial, and commercial accomplishments resulting from the Reclamation development reimburse the taxpayers many times over for the money invested in such projects.

About 20 percent of the 8.5 million acres of irrigated California land is supplied with water, wholly or partly, by Bureau facilities. Of these 1.7 million project acres, about 1 million are in the multipurpose Central Valley project.

Central Valley Project

Internationally known for its outstanding physical plant and the magnitude of its benefits, the Central Valley project is the world's prime example of Federal-State cooperation in water resources development.

As noted earlier, the project evolved from California's State Water Plan of the 1930's and has since been expanded into one of the most extensive water transportation systems in the world. Its structural features include 14 storage dams, two diversion dams, 1 major and a number of lesser pumping plants, 391 miles of canals, 982 miles of laterals, 41 miles of drains, 7 hydroelectric plants with over a million kilowatts of installed capacity, and 1,210 circuit miles of transmission lines.

Primary function of the gigantic project is to carry water from the Sacramento and Trinity River Basins, where a surplus exists, into the water-deficient areas of the San Joaquin Valley, a total distance of nearly 500 miles.

Among its facilities is the world's highest earthfill dam, Trinity Dam, which rises 537 feet above the streambed of the Trinity River and impounds 2.5 million acre-feet of water. Another prominent feature is Shasta Dam and powerplant on the Sacramento River. This is California's largest hydroelectric installation, operating five main generators, each of 75,000 kilowatts in rated capacity. Floodwater drops 480 feet over the dam spillway, nearly three times the height of Niagara Falls.

Projects Contribute to Prosperity

A multipurpose venture in every respect, the Central Valley project has a service area which embraces 18 counties, as large in total size as the State of Pennsylvania. For wealth and diversity, the agricultural production and related economic activity within these counties is unequaled. Project water helps grow crops valued at approximately $300 million a year, and about half of this production is in vegetables, fruits, and nuts—high quality foods essential to a healthy diet. The cumulative value of crops grown on lands receiving irrigation water from the project during a recent 20-year period is close to $2.8 billion—more than three times the value of all project plant, property, and equipment. Estimates for the same period indicate that about $1 billion in Federal tax revenues have been returned to the U.S. Treasury by the areas benefiting from the operation of CVP.

Other Projects

Two other of America's most fertile, diversified, and prosperous agricultural areas, the Coachella and Imperial Valleys, are nourished by the waters of the Colorado River through facilities of the Boulder Canyon project, which includes Hoover Dam and powerplant in Arizona

Imperial Dam on the Colorado River is a diversion point for water to Imperial Valley through the All-American Canal.

and Nevada, as well as the All-American Canal system in California.

The cumulative value of crops produced on these project lands in the Golden State during two recent decades is $2.3 billion, more than 15 times the cost of all project facilities in the three States. Estimates are that, during the same period, between $600 and $700 million in additional Federal tax revenues have been returned to the U.S. Treasury by the economic sectors benefitting from operation of the Boulder Canyon project.

Industrial and Municipal Water

As more and more people congregate in cities and towns, the demand for municipal and industrial water mounts rapidly, and the Bureau of Reclamation is responsive to this changing pattern of modern life.

The CVP now delivers approximately 37 billion gallons of water for municipal and industrial use to more than a quarter of a million people in the urban areas of the Valley. Parker Dam's regulation of the Colorado River assures municipal and industrial water for Los Angeles, San Diego, and other cities in the Golden State, supplying an urban population of more than 8 million people with 344 billion gallons of water annually by means of the Colorado River aqueduct and the San Diego aqueduct.

Other Bureau of Reclamation projects add more than 9 billion gallons of water a year to assuage the thirst and meet other domestic and industrial water needs of over 200,000 additional Californians.

Paying Partner

The Bureau also helps meet the electric power needs of the most populous State in the Nation. It markets more than 6 billion kilowatt-hours of electric energy a year to California consumers, an amount sufficient to serve the entire electric power requirements of San Francisco for almost 2 years.

When the Pacific Northwest-Southwest Intertie is completed to bring hydroelectric power from the Northwest, the amount of electric energy furnished the people and industries of the Golden State will multiply markedly. In the meantime, California's economic sinews are strengthened by 4 billion kilowatt-hours a year generated at eight Bureau powerplants located in the State and by about 2 billion that come into the State annually from the mammoth plant at Hoover Dam on the Arizona-Nevada border.

As in other Reclamation areas, the revenue realized from sale of power makes this a double-edged benefit of the program. While supplying badly-needed electric energy, power is also the paying partner which finances the greater part of the cost of the Reclamation facilities and helps make irrigation and other benefits possible. In the Central Valley project, power revenues have already paid off nearly $125 million of the $357.6 million construction costs allocated to power, and it will also repay $130 million of the irrigation investment.

An increasingly important Reclamation contribution is recreation and fish and wildlife enhancement. On Reclamation projects throughout California, a total of 71,000 acres of land and 105,000 acres of water surface is available on and around reservoirs for fishing, swimming, camping, boating, and other outdoor recreation. In addition, reservoirs furnish 1,200 miles of shoreline. Nearly 10 million persons visited the 22 Reclamation recreation areas in California in a recent year, and the number increases every season.

Water Resource Development Expands

Besides the extensive projects already mentioned, there are 13 other projects in or partly within California: the Klamath, Cachuma, Solano, Newlands, Orland, Palo Verde Diversion, San Diego, Santa Maria, Truckee Storage, Ventura River, Washoe, Yuma, and the Colorado River Front Work and Levee System.

Numerous Reclamation developments are in various stages of planning and construction in California, both as additions to existing projects and as separate projects.

The chief development under construction is the half-billion-dollar San Luis Unit of the CVP—which is being financed jointly by the Federal Government and the State. An outstanding planned development is the proposed Auburn-Folsom South Unit of the American River Division of the CVP. The latter, together with other projects presently in the advanced planning stages, would provide irrigation water for more than 2 million acres and installed electric energy capacity of nearly a half million kilowatts, in addition to other reclamation benefits.

Additional information on Projects of the Bureau of Reclamation in California can be obtained by writing to the following regional office: Bureau of Reclamation, P.O. Box 2511, Sacramento, Calif., 95811.

Office of Saline Water

In 1952, Congress—concerned about water shortages becoming apparent in various areas of the country—began a modest program to find the cheapest and most practical method of converting sea and brackish waters into fresh water. The appropriation that year was $175,000. In 1958, the Department of the Interior's Office of Saline Water was directed by the Congress to build five large demonstration plants (250,000–1,000,000 gallons per day); one on the Atlantic, Pacific, and gulf coasts, and two in inland brackish water areas. During the 1952–61 period, the cost of converted water was driven down from about $4–$5 per thousand gallons to about $1–$1.25.

The Office of Saline Water administers a research program concerned with more than 200 different processes in the 5 basic methods of saline water conversion: electrodialysis, distillation, long tube-vertical distillation, forced circulation vapor compression, and others, including freezing.

California Demonstration Plant

Less than 2 years ago, the Office of Saline Water operated a demonstration plant which produced more than a million gallons of fresh water daily at Point Loma near San Diego. The plant was closed down early in 1964 and was transferred to the Department of the Navy, which moved it to Guantanamo Bay, Cuba, to help supply fresh water for the U.S. naval base there.

The plant utilized a multistage flash distillation process for converting sea water and was the largest of its type in the world. Originally designed to produce 1 million gallons of fresh water daily at an operating temperature of 190 degrees, the plant ended up turning out 1.4 million gallons daily after improved technology permitted increasing the operating temperature to 250 degrees.

The product water of the plant was added to the water supply of the city water district. The Office of Saline Water also operates a West Coast Test Facility at San Diego.

Other Saline Water Plants

California has more actual saline water conversion plants in operation than any other State in the Union—in fact more than all the other States combined.

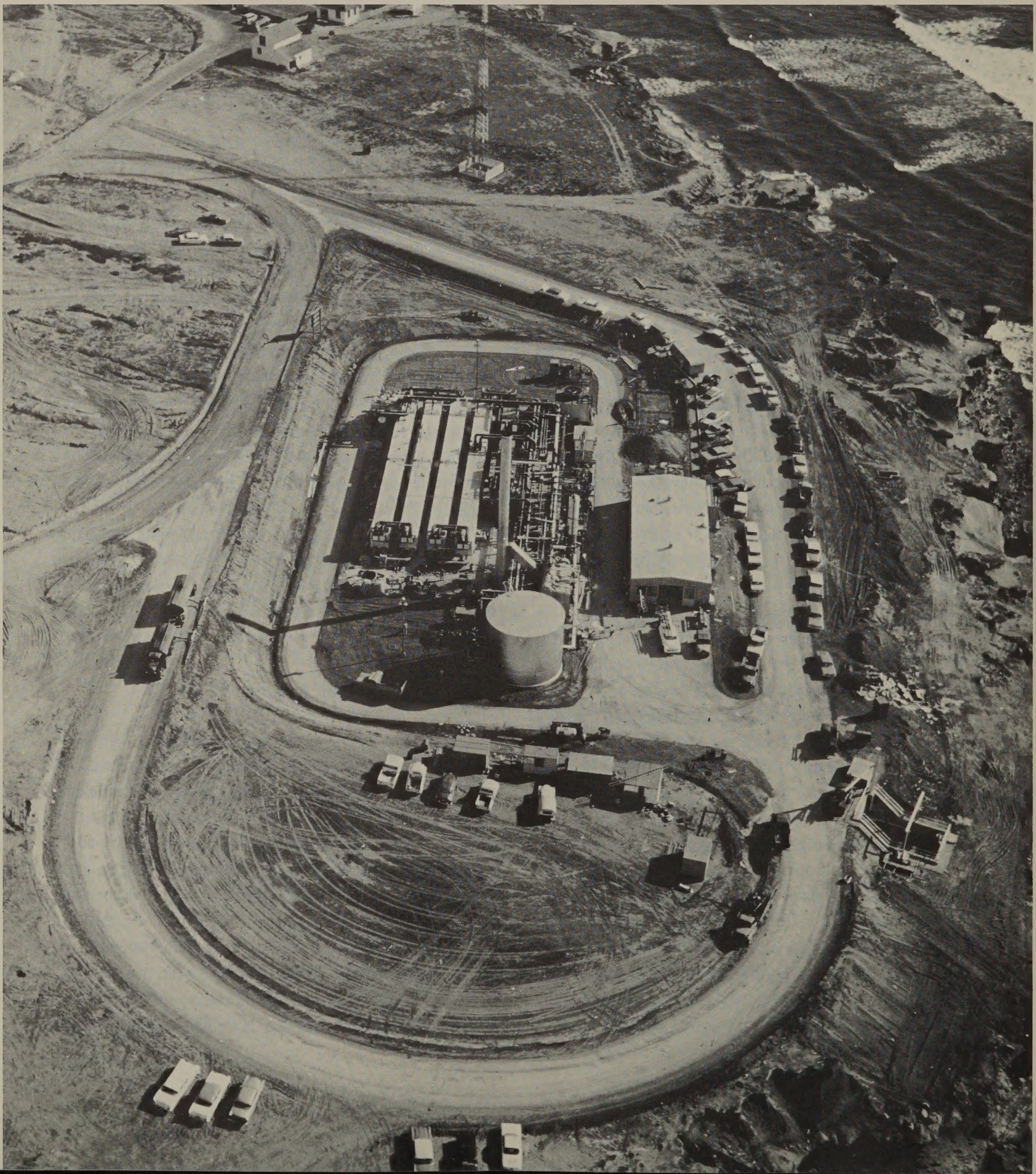
The town of Coalinga depends for its total fresh water supply on a water conversion unit that converts brackish local ground water for use, utilizing a membrane process developed under an OSW Research and Development contract, and built by Ionics, Inc.

The Pacific Gas and Electric powerplant at Morro Bay is converting 100,000 gallons of sea water per day. A 100,000 gallons-per-day unit operates at Catalina Island, and several experimental pilot plants, owned and operated by private corporations, turn out an undetermined amount of water at sites throughout the State.

The State of California continues outstanding joint participation with the Department of the Interior in the world's search for a cheap and and practical method of converting saline water into fresh water.

Additional information can be obtained from the Office of Saline Water, Department of the Interior, Washington, D.C., 20240.

The San Diego plant, which has been transferred to Guantanamo Bay, Cuba, to increase the fresh water supply for the U.S. naval base there, is among the largest sea water conversion plants in the world.



Bureau of Outdoor Recreation

The Department of the Interior's Bureau of Outdoor Recreation administers a program of grants-in-aid available to all States for outdoor recreation planning, acquisition, and development.

Authorized by the Land and Water Conservation Fund Act of 1965, this program provides Federal matching funds for State and local outdoor recreation projects. The Land and Water Conservation Fund derives moneys from "pay-as-you-go" user fees and entrance charges at Federal recreation areas, sale of surplus Federal property, a Federal tax on motorboat fuels, and advance appropriations.

The Bureau of Outdoor Recreation provides technical assistance to California in statewide planning necessary for State participation in the 50–50 matching fund program. These plans will provide guidelines for future outdoor recreation developments by individuals, private organizations, cities, counties, and various units of the State government.

Chief duties of the Bureau of Outdoor Recreation are to cooperate with the State on outdoor recreation matters, promote coordination in Federal outdoor recreation programs, administer the grants-in-aid program, and develop a long-range, continuing nationwide outdoor recreation plan based on State, Federal, regional, local, and private plans. The Bureau manages no lands or recreation facilities.

The State of California has named the director of the State resources agency to serve as liaison for the State in working with the Bureau of Outdoor Recreation.

Additional information may be obtained from the Regional Director, Bureau of Outdoor Recreation, Pacific Southwest Region, 450 Golden Gate Avenue, Box 36062, San Francisco, Calif., 94102.

The State of California operates this beach on the Central Valley project's Folsum Lake.

Soil Conservation Service

The Soil Conservation Service of the Department of Agriculture helps landowners and operators in California with soil and water conservation programs.

Most SCS assistance is given through soil and water conservation districts, locally organized under State law and managed by an elected board of unsalaried supervisors.

SCS gives on-site help in developing, applying, and maintaining individual conservation plans for protection and improvement of the land. These conservation plans are based on soil surveys that help the landowner determine land use potential. Highway commissions, builders, contractors, and township and county governments also use soil survey information.

California also receives assistance through the Watershed Protection and Flood Prevention Act, Public Law 566. SCS gives assistance to projects designed to reduce flood and sedimentation damage to cropland, roads, bridges, and State parks, to reduce erosion and runoff from upstream lands and to develop water supplies and recreational facilities. Small watershed projects are initiated, built, and operated by local people.

SCS area offices are located at Fresno, Red Bluff, Riverside, Sacramento, Santa Barbara, Sebastopol, and Watsonville.

Additional information on soil and water conservation programs in California may be obtained from the Soil Conservation Service State Office at the Tioga Building, 2020 Milivia Street, Berkeley, Calif., 94704.

Soil conservation is a multi-faceted operation involving water and flood control as well as proper farming and cultivation. Pictured are early tomatoes under hot caps in the San Luis Rey Soil Conservation Disitrct. The sloping hillside shown is typical of the frost free land on which San Diego farmers can produce off season crops.

"All the passengers thronged with shining eyes. At every turn we could see further into the land of our happy future."

Robert Louis Stevenson, On crossing the Sierra Nevadas by train.

The Future

California, indeed, has become the land of happy future for millions of Americans. But, in many ways, the golden promise of California lies in the future. Although faced with many problems in the conservation, development, and wise use of her resources, California's citizens bring an indispensible resource of their own to the tasks ahead: their determination to succeed.

Today, the restless drive which sent men and wagons across the mountains, the adventurous spirit which launched small ships on mighty oceans in search of gilded shores, and the willingness to shoulder the responsibilities of providing for the present and the future simultaneously still characterize the people of California.

The land, water, minerals, and soils of the Golden State have helped make it the most populous in the Nation. The State is extraordinarily endowed in resources both above and below the land and sea, in natural beauty, in the imagination of her people. In modern California, the myth of *El Dorado* has become reality.

The Federal natural resource agencies are proud of their contributions to the past and present of the Golden State—of their opportunity to help a resourceful people mold a modern terrestrial paradise. In cooperation with the Californians of today, they look to a future more splendid than the past.

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Some Other Interior Department Publications of Special Interest

Natural Resource booklet series, states: Nevada, $.45; Massachusetts, $.45; Colorado, $.50; Arizona, $.45; Oregon, $.50; Ohio, $.45; Montana, $.50; Washington, $.50; New Mexico, $.50; West Virginia, $.45; Idaho, $.50; Utah, $.45. "The Race for Inner Space," $.55; "Quest for Quality," (in full color) $1.00; "Reclamation Era," (published quarterly) subscription rates, $.50 a year. "Federal Assistance in Outdoor Recreation," $.20; 1963 Minerals Yearbooks—Vol. 1, Metals and Minerals (Except Fuels), $4.50; Vol. 2, Fuels, $2.50; Vol. 3, Area Report: Domestic, $4.25; U.S. Wall Map, $2.00; "Our Public Lands," (quarterly magazine), $.60 annually; "Wildlife on the Public Lands," (in full color) $.35; Waterfowl Tomorrow, $4.00; Attracting Birds, $.15; Shrimp Tips, $.25; Take a can of Salmon, $.25; "Vacationing With Indians," $.30; "American Indian Calendar," $.20; "Indian Affairs—A Progress Report," $.15; Answers to Questions about the American Indian, $.20; Colonials and Patriots, $2.75; Parks for America, $5.25; Geology of Mt. Rainier National Park, $1.75; A Primer on Water, $.35; A Primer on Ground Water, $.25 "Lake Powell, Jewel of the Colorado," (in full color) $.75.

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(Front Cover) Vernal Falls, Yosemite, is a spot for contemplation as well as recreation.

(Back Cover) Loveliest of California's lakes is Tahoe, in part the work of a mighty glacier.

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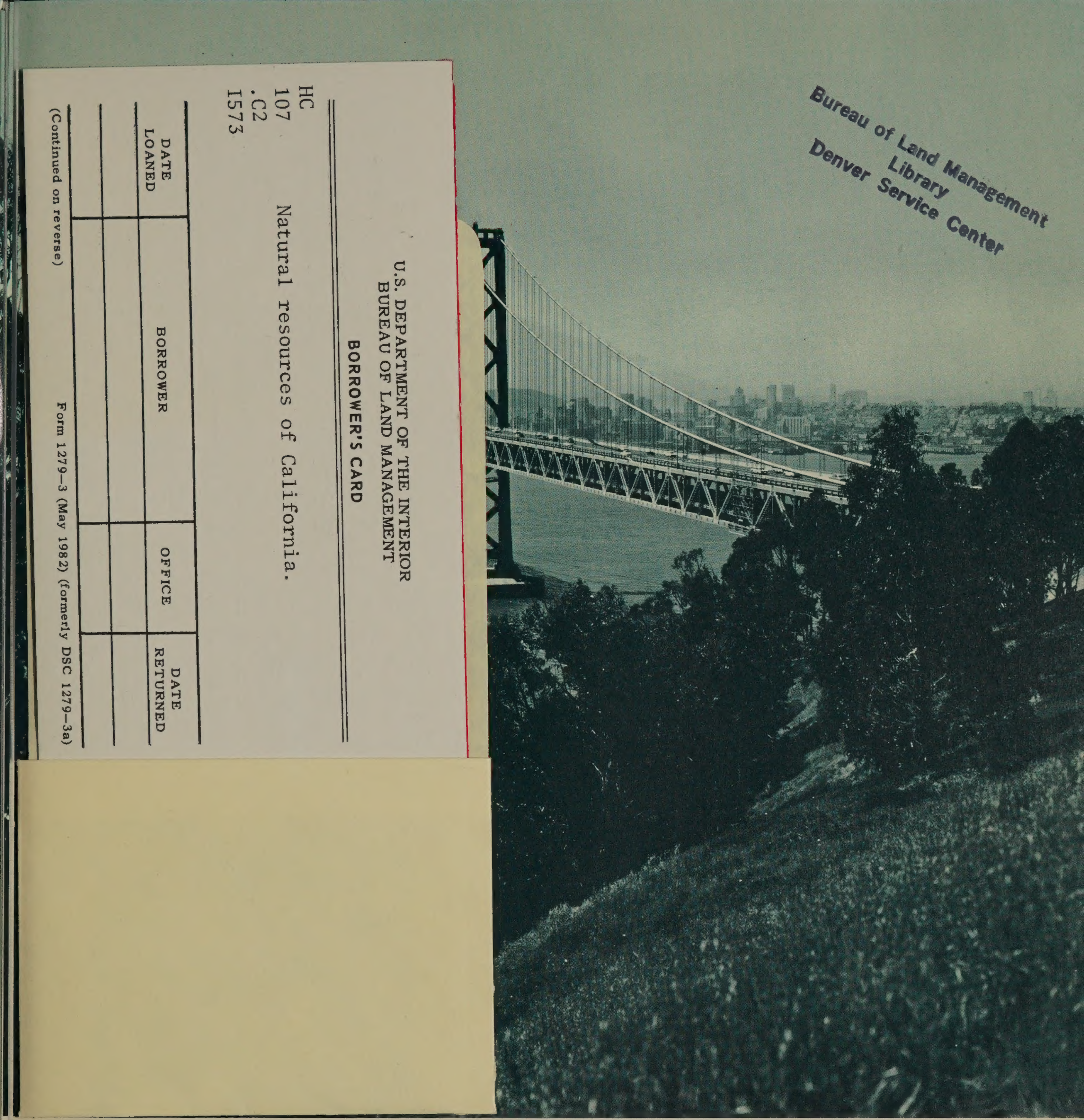

The graceful sweep of the Bay Bridge and the hills of San Francisco provide a fitting end to book on California—a land of contrast and promise, both natural and manmade.

THE GREAT SEAL OF THE STATE OF CALIFORNIA

Created in 1849, the Department of the Interior—a Department of Conservation—is concerned with the management, conservation, and development of the Nation's water, fish, wildlife, mineral, forest, and park and recreational resources. It also has major responsibilities for Indian and Territorial affairs.

As the Nation's principal conservation agency, the Department works to assure that nonrenewable resources are developed and used wisely, that park and recreational resources are conserved for the future, and that renewable resources make their full contribution to the progress, prosperity, and security of the United States—now and in the future.

March 3, 1849